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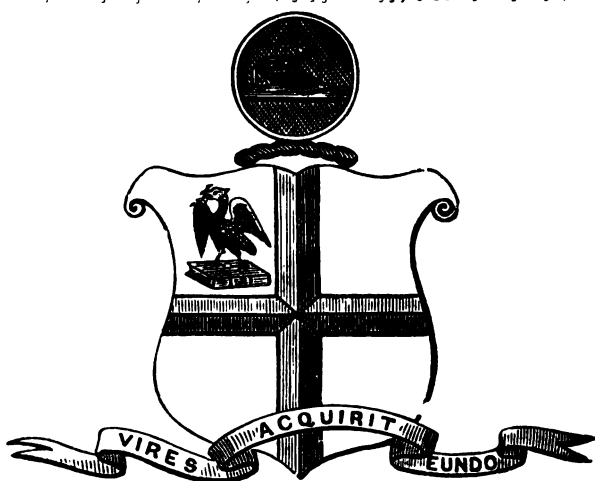
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DURING THE
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ABBEVILLE. Société d'émulation.

Bulletin trimestriel, 1896, 1897 . . . 8°. 1896-97

Mémoires, 4e série, tom. 3 pt. ii . . . 8°. 1897

ALBANY. University of the state of New York.

Home education bulletin, no. xxxi. . . 8°. 1900

College department. Annual report, 2. 1899, 1, 2.
2 voll. 8°. 1900

High school department. Annual report, 6. 1898, 1.
8°. 1899

New York state library. Annual report, 81, 1898.
8°. 1899

Bulletin: legislation, no xiii . . . 8°. 1900

New York state museum. Annual reports of the
regents. 49, vol. 3; 50, vol. 2; 51, voll. 1, 2.
4 voll. 8°. 1898-99

Bulletins, voll. 4, no. xix; 5; 6; 7, no. xxxii.
8°. 1898-1900

AMSTERDAM. Koninklijke academie van wetenschappen.

Jaarboek, 1899 . . . 8°. 1900

Proceedings of the section of sciences, vol. 2. 8°. 1900

Verslag van de gewone vergaderingen der wis- en
natuurkundige Afdeeling, deel 8 . . . 8°. 1900

Verslagen en mededeelingen (*letterkunde*). 4 *de*
reeks, deel 3 . . . 8°. 1899

BATH. Bath natural history and antiquarian field club.

Proceedings, voll. 1, nos. i-iii; 4, no. iv; 9, nos. i,
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- BERWICKSHIRE.** Berwickshire naturalists' club.
 Proceedings, vol. 17, no. i 8°. 1899
HARDY (J.) The session book of Bunkle and
 Preston, 1665-1690. 8°. 1900
BIRMINGHAM. Birmingham natural history and
 philosophical society, voll. 10; 11, pt. i . . 8°. 1897
BORDEAUX. Commission météorologique de la
 Gironde.
 Observations, 1898-99 8°. 1899
 ——— Société des sciences physiques et naturelles.
 Mémoires, 5e série, tom. 3, cahier ii; 5, cahier i.
 2 pts. 8°. 1899
 Procès-verbaux des séances, 1898-99 . . . 8°. 1899
BOSTON, Mass. Boston society of natural history.
 Memoirs, vol. 5, nos. vi, vii . . . 2 pts. 4°. 1900-01
 Occasional papers, vol. 4 8°. 1900
 Proceedings, vol. 29, nos. ix-xiv . . . 6 pts. 8°. 1900
BRISBANE. Royal geographical society of Australasia.
 Queensland geographical journal, *new series*, vol. 15.
 8°. 1900
BRISTOL. Bristol naturalists' society.
 Proceedings, *new series*, vol. 9, pt. ii . . . 8°. 1901
BUENOS AYRES. Museo nacional.
 Comunicaciones, tom. 1, nos. vi-viii. 3 pts. 8°. 1900-1901
CALCUTTA. Asiatic society of Bengal.
 Journal. Pt. i; ed. by the Philological secretary,
new series, vol. 69, nos. i, ii. 2 pts. 8°. 1900-1901
 ——— Pt. ii; ed. by the Natural History secretary,
new series, vol. 69 8°. 1901
 ——— Pt. iii; ed. by the Anthropological secre-
 tary, *new series*, vol. 70, no. i 8°. 1901
 Proceedings; ed. by the Honorary secretaries,
 1900, nos. v-xii; 1901, nos. i, ii
 10 pts. 8°. 1900-01
CALIFORNIA. University of California.
 Bulletins, *new series*, vol. 2, nos. i, iii . 2 pts. 8°. 1900

CALIFORNIA—*contd.* University of California—*contd.*

- REID (W.) Our new interests. (pph.) . . . 8°. 1900
 University chronicle, vol. 3 8°. 1900
Agricultural experiment station. Bulletin, nos.
 cxxvii-cxxx 4 pts. 8°. 1900
 Report of work, 1897-98 8°. 1900
Department of geology. Bulletin, vol. 2, no. vii. 8°. 1900
Lick observatory. Publications, vol. 4 . . . 4°. 1900

CAMBRIDGE, Mass. Harvard university.

- Annual report, 1899-1900 8°. 1901
Museum of comparative zoology. Annual report of
 the assistant in charge, 1899-1900 . . . 8°. 1901
 Bulletins: voll. 36, nos. i-vi; 37, nos. i, ii; 38,
 nos. i-iv 12 pts. 8°. 1900-01
Peabody museum of American archæology and ethno-
logy. Papers, vol. 2 8°. 1901

CAPETOWN. Royal observatory.

- Annals, voll. 5: 8, pt. ii 4°. 1900
 Catalogue of 1905 stars 8°. 1899
 Report of H.M. astronomer, 1899 4°. 1900
 Results of meridian observations, 1866-70 . . 8°. 1900

CHESTER. Chester society of natural science, literature and art.

- Annual report and proceedings, 29 8°. 1900

COPENHAGEN. Kongeligt dansk videnskabernes Selskab.

- Oversigt over d. k. d. vidensk. Selsk. Forhand-
 linger, 1900, nos. ii-vi; 1901, nos. i-iii . . .
 8 pts. 8°. 1900-01

—— Kongeligt nordisk Oldskrift-Selskab. Aarbøger
 for nordisk Oldkyndighed og Historie. 2
 Række, bde. 12, heft iv; 13, heft i; 14, heft iii.

3 pts. 8°. 1897-99

DUBLIN. Royal Irish academy.

- Proceedings, 3rd series, voll. 5, no. v; 6, no. i. . .
 2 pts. 8°. 1900

DUBLIN—*contd.* Royal Irish academy—*contd.*

Transactions, vol. 31, pts. ix-xi . . . 3 pts. 4°. 1900

EDINBURGH. Edinburgh geological society.

Transactions, vol. 8, pt. i 8°. 1901

—— Royal Scottish society of arts.

Transactions, vol. 15, pt. ii 8°. 1900

—— Royal society of Edinburgh.

Proceedings, vol. 22 8°. 1900

—— Scottish meteorological society.

Journal, 3rd series, vol. 11, nos. xiii-xvi; new series,

vol. 6, nos. lxx-lxxix 8°. 1900-01

GLASGOW. Philosophical society.

Proceedings, voll. 29, 31. . . . 2 voll. 8°. 1898-1900

GÖTTINGEN. Königliche Gesellschaft der Wissen-
schaften.

Nachrichten (*Geschäftliche Mittheilungen*), 1900,

Heft. i, ii 2 pts. 8°. 1900

—— (*Philolog.-historische Klasse*), 1900, Heft.

i-iii 3 pts. 8°. 1900

GT. BRITAIN AND IRELAND. Board of ordnance.

Comparisons of the standard of length of England,

France, Belgium, Prussia, Russia, India, Aus-

tralia 4°. 1866

—— British association for the advancement of
science.

Reports, 1899, 1900 2 voll. 8°. 1900

—— Parliament.

Annual report on alkali, etc., works, 36. . . 8°. 1900

GREENWICH. Royal observatory.

Astronomical and magnetical and meteorological

observations, 1878, 1879, 1881, 1896, 1898,

and Appendix ii 6 voll. 4°. 1880-1900

HAARLEM. Société hollandaise des sciences.

Archives néerlandaises des sciences exactes et

naturelles, 2e série, tom. 3, livr. v; 4, livr.

i-iii; 5 8°. 1900-1901

HALIFAX, *Nova Scotia*. Nova Scotian institute of science.

Proceedings and transactions, vol. 10, pt. ii . 8°. 1900

HELSINGFORS. Societas scientiarum fennica.

Bidrag till kännedom af Finlands natur och folk,

pts. lviii-lx 3 voll. 8°. 1900

Ofversigt af förhandlingar, 40-42 3 voll. 8°. 1898-1900

HERTFORD. Hertfordshire natural history society and field club.

Transactions, vol. 10, pts. v-viii 4 pts. 8°. 1900-1901

INDIA. Geological survey.

Memoirs, voll. 28, pt. ii; 33, pt. i. 2 pts. 1a. 8°. 1900-1901

Palæontologia indica. Series ix. The Jurassic

fauna of Cutch, vol. 2, pts. i, ii . . . 4°. 1900

Series xv. Himalayan fossils, vol. 3, pt. ii . 4°. 1899

General report, 1899-1900 8°. 1900

——— Trigonometrical survey.

Account of the operations of the great trigonometrical survey of India, voll. 1-9

9 voll. 4°. 1870-83

LEEDS. Leeds philosophical and literary society.

Annual report, 80 8°. 1900

LEICESTER. Leicester literary and philosophical society.

Transactions, vol. 5, pts. ix, x . . . 2 pts. 8°. 1900

LIVERPOOL. Health department.

Report on the health of the city of Liverpool

during 1899 8°. 1900

The sanitary inspector, voll. 2, nos. vi-viii; 3, nos.

i-xii 4°. 1900-1901

——— Liverpool engineering society.

Transactions, vol. 21 8°. 1900

——— Liverpool geological society.

Proceedings, vol. 8, pt. iv 8°. 1900

——— Liverpool naturalists' field club.

Proceedings, 1900 8°. 1901

LIVERPOOL—*continued*. Mersey docks and harbour board.

Report of the director of the observatory, 1899, 1900

2 pts. 8°. 1900-1901

—— North-western and midland sanitary inspectors' association.

LONDON. Architect and contract reporter, voll.

63, nos. 1643-1645; 64, no. 1646

4 pts. f°. 1900

—— Clinical society.

Transactions, voll. 1-5 . . . 5 voll. 8°. 1868-72

—— East India association.

Journal, voll 32, 33 . . . 2 voll. 8°. 1900-1901

—— Geological society.

Quarterly journal, voll. 56, pts. ii-iv; 57, pts. i-iii

6 pts. 8°. 1900-1901

Geological literature added to the geological

society's library, 1899, 1900 2 voll. 8°. 1900-1901

List 8°. 1900

—— Institution of civil engineers.

Minutes of proceedings, voll. 142, 143 . 8°. 1900-1901

—— Subject-index, voll. 119-142 . 8°. [1900]

Charter, supplemental charters, by-laws and list of

members 8°. 1900

—— Linnean society.

Journal (*Botany*), voll. 34, nos. ccxl, ccxli; 35, no.

ccxlii 3 pts. 8°. 1900-1901

—— (*Zoology*), vol. 28, nos. clxxix-clxxx

3 pts. 8°. 1900-1901

Proceedings, 112th session, 1899-1900 . 8°. 1900

—— London, Edinburgh and Dublin philosophical

magazine and journal of science, voll. 22-24

3 voll. 8°. 1843-44

—— Nature, voll. 62, nos. 1594-1617; 63, nos.

1618-1620, 1622-1641, 1643; 64, nos. 1644-

1651, 1653- 8°. 1900-1901

LONDON—*continued*. Royal asiatic society of Gt.
Britain and Ireland.

- Journal (*Bombay branch*) vol. 20, nos. lv, lvi, and
extra no. 8°. 1899-1901
- Royal astronomical society.
Monthly notices, voll. 61, nos. i- . . . 8°. 1900-1901
- Royal institute of British architects.
Journal, *3rd series*, voll. 7, nos. xi-xx ; 8, nos. i-xv
4°. 1900-1901
- Royal institution of Great Britain.
Proceedings, vol. 16, pt. i 8°. 1900
- Royal meteorological society.
Quarterly journal, voll. 26; 27, nos. cxvii, cxviii
8°. 1900-1901
- Royal microscopical society.
Journal, 1900 ; pts. v, vi ; 1901, pts. i-iv.
6 pts. 8°. 1900-1901
- Royal society.
Proceedings, voll. 67, 68 . . . 2 voll. 8°. 1900-1901
Reports to the malaria committee, 4th and 5th
series 2 pts. 8°. 1901
- Royal statistical society.
Journal, voll. 63, pts. iii, iv ; 64, pt. i . . 8°. 1900-1901
- Scientific opinion, voll. 1-3 . . 3 voll. 4°. 1869-70
- Society of antiquaries.
Proceedings, *2nd series*, vol. 18, no. i . . . 8°. 1901
- South-eastern union of scientific societies.
Report and transactions, 1899 8°. 1899
- Travel, voll. 5, nos. l-liv, lvi ; 6, nos. lvii-lxiii
13 pts. 8°. 1900-1901
- MANCHESTER. Literary and philosophical society.
Memoirs and proceedings, voll. 44, pt. v ; 45, pts.
i-iii 4 pts. 8°. 1900-1901
- MELBOURNE. Royal society of Victoria.
Proceedings, *new series*, voll. 12, pt. ii ; 13, pt. i
2 pts. 8°. 1900

MEXICO. Instituto geológico de México.

Boletín, no. xiv 4°. 1901

MILAN. Reale istituto lombardo di scienze e lettere.

Memorie (*classe di lettere, scienze storiche e morali*),

voll. 18, fasc. vii-x; 21, fasc. i, ii

6 pts. 8°. 1899-1900

Rendiconti, *serie ii*, voll. 12, 13, 32 3 voll. 8°. 1879-99

MONTREAL. Royal society of Canada.

Proceedings and transactions, vol. 1; *2nd series*,

vol. 5 8° and 4°. 1883-99

MOSCOW. Société impériale des naturalistes de

Moscou.

Bulletin, 1899, nos. ii, iii 8°. 1900

MUNICH. Königliche Akademie der Wissenschaften.

Mathematisch-physikalische Classe. Sitzungsbe-

richte, voll. 30, nos. ii, iii; 31, no. i

3 pts. 8°. 1900-1901

Inhaltsverzeichniss, Jahrg. 1886-1899 . . . 8°. 1900

NEW HAVEN, Conn. American journal of science

and arts, *2nd series*, voll. 33-38 6 voll. 8°. 1862-64

NEW SOUTH WALES. Department of mines.

Annual reports, 1878, 1879 . . . 2 voll. 4°. 1879-80

NEW YORK. American geographical society.

Bulletin, voll. 32, nos. iv, v; 33, no. ii

3 pts. 8°. 1900-1901

—— American museum of natural history.

Bulletin, voll. 11, pt. iii 8°. 1900

—— New York academy of sciences.

Annals, voll. 12, pts. ii, iii; 13 . . . 8°. 1899-1900

Memoirs, vol. 2, pt. ii 4°. 1900

—— New York public library.

Bulletin, voll. 4, nos. vi, viii-xii; 5, nos. i-vii

13 pts. 8°. 1900-1901

PARIS. École polytechnique.

Journal, cahiers xx-xxii, xxviii-xxx, xxxii-xxxiv,

xl, xliii-xlvi, li-liii . . . 18 pts. 4°. 1833-83

PENZANCE. Royal geological society of Cornwall.

Transactions, vol. 12, pts. iii, vi . 2 pts. 8°. 1898-1901

PHILADELPHIA. Academy of natural sciences.

Proceedings, 1900, pts. ii, iii . . 2 pts. 8°. 1900

—— American philosophical society.

Calendar of the correspondence relating to the

American revolution 8°. 1900

Proceedings, vol. 39 8°. 1900

—— Franklin institute of the state of Pennsylvania.

Journal devoted to science and the mechanic arts,

voll. 150, 151 . . . 2 voll. 8°. 1900-1901

—— Zoological society.

Annual reports, 28, 29 . . . 2 pts. 8° 1900-1901

PRESBURG. Verein für Natur- und Heilkunde.

Verhandlungen, *neue Folge*, bd. 11 . . 8°. 1900

SAINT PETERSBURG. Academia scientiarum imperialis.

Bulletins, *5e série*, voll. 12, nos. ii-v; 13, nos. i-iii

7 pts. la. 8°. 1900

SCOTLAND. Mining institute of Scotland.

Transactions, voll. 21, pt. iv; 22, pts. i-iii

4 pts. 8°. 1900-1900

SOUTHPORT. Meteorological department.

Reports, 1896, 1897, 1900 . . 3 pts. 4°. 1897-1901

STOCKHOLM. Kongliga svenska vetenskaps academi.

Handlingar, *ny följd*, Bde, 6-13 . . 8 voll. 4°. 1865-76

SYDNEY, N.S.W. Royal Society of New South

Wales.

Journal and Proceedings, vol. 33 . . . 8°. 1900

Abstract of Proceedings, Sept.-Dec., 1899, May-

June, 1900 6 pts. 8° 1899-1900

TAUNTON. Somersetshire archæological and natural history society.

Proceedings, vol. 46 8°. 1900

TOPEKA. Kansas academy of science.

Transactions, vol. 14 8°. 1896

TORONTO. Canadian institute.

Proceedings, *new series*, vol. 2, pt. iv . . . 8°. 1901

Transactions, vol. 6, pts. i, ii . . . 8°. 1899

TRURO. Royal institution of Cornwall.

Journal, vol. 14, pts. i, ii . . . 2 pts. 8°. 1900-1901

UNITED STATES OF AMERICA. American association for the advancement of science.

Proceedings, voll. 48, 49 . . . 2 voll. 8°. 1899-1900

— Department of Agriculture.

Yearbook, 1899 8°. 1900

Division of biological survey. Bulletins, nos.

xii-xiv 3 pts. 8°. 1900

North American fauna, nos. xvi-xix.

4 pts. 8°. 1899-1900

Section of foreign markets. Bulletin, nos. xiii-xxi.

9 pts. 8°. 1898-1900

— War department.

Signal office. Daily bulletins of weather reports.

Sept.-Dec., 1872; Jan.-Aug., Oct., Dec., 1873;

Jan., 1874 15 voll. 4°. 1873-76

UPSAL. K. humanistiska Vetenskapssamfundet.

Skrifter, Bd. 5 8°. 1897

WASHINGTON. Naval observatory.

Astronomical, magnetic and meteorological observations, 1898 4°. 1900

Publications, *2nd series*, vol. 1 4°. 1900

— Columbia. Smithsonian institution.

Annual reports of the board of regents, 1897, pt. ii;

1898, 1899 5 voll. 8°. 1899-1901

Miscellaneous collections, vol. 41, no. 1253 . . . 8°. 1901

Bureau of ethnology.

Annual Reports, 17, 18, pt. i . . . 3 voll. 8°. 1898-99

WELLINGTON, N.Z. New Zealand Institute.

Transactions and proceedings, vol. 32 . . . 8°. 1900

Tregear (E.) *Mangareva dictionary*, Gambier islands 8°. 1899

WELSHPOOL. Powysland club.

Collections historical and archæological relating to
Montgomeryshire, vol. 31, pt. ii . . . 8°. 1900

AIREY (*Sir G. B.*) Essays on the invasion of Britain
by Julius Cæsar, etc. 4°. 1865

CHAMBERS (C.) The meteorology of the Bombay
presidency 4°. 1878

GORDON (R.) On the theory of the flow of water in
open channels f°. *Rangoon*, 1875

HENRY (J.) *Aeneidea*, vol. 1, pp. 197-64; 82.

8°. *Dublin*, 1877-79

INMAN (T.) On the origin of certain Christian and
other names 4°. *L'pool.*, 1866

KIDMAN (J.) A philomathic retrospect . . 8°. *L'pool.*, 1899

Miscellaneous papers 3 vol. 4° [1815-56]

NEWLANDS (J.) List of streets within the borough
of Liverpool, 1855 4°. *L'pool.*, 1855

QUARITCH (B.) A general catalogue of books . . 8°. 1880

ROSCOE (*Sir H. E.*) *Bunsen (pph.)* . . . 8°. [1900]

TREASURER'S ACCOUNT, 1899-1900.

Dr. *The LITERARY AND PHILOSOPHICAL SOCIETY OF LIVERPOOL.* Cr.

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R. C. JOHNSON,
ALFRED W. NEWTON.

1st October, 1900.

PROCEEDINGS
OF THE
LIVERPOOL
LITERARY AND PHILOSOPHICAL SOCIETY.

NINETIETH SESSION, 1900-1901.

ROYAL INSTITUTION, LIVERPOOL.

ANNUAL MEETING.

The Annual Meeting of the Society was held at the Royal Institution, on 1st October, 1900.

Mr. J. Maxwell McMaster, Vice-President, in the chair.

The following Report of the retiring Council was read and adopted :—

REPORT.

The Council has pleasure in presenting its Report for the Eighty-ninth Session of the Society.

Thirteen ordinary meetings were held during the Session, and papers of great interest were read before the Society, the discussions upon them being well sustained. The attendance at these meetings was above the average; this was largely due to the numerous company which assembled to hear Prof. Lodge's paper on "Modern Views of Matter" on 5th March. At the commencement of the Session a *Conversazione* was held, which was attended by many members and friends; the Council much appreciates

the efforts of those who contributed to make it a success. The Annual Dinner was held on 13th December, the Society entertaining as guests Mrs. Humphrey Ward, Sir Robert Ball, and others; eighty members and guests were present, and the Council has resolved to make the dinner an annual institution, subject to the approval of the Society. Several well-known members have been removed from the roll by death during the Session, viz., Mr. W. H. Picton, the Rev. Dr. Martineau, Dr. Adolphus Ernst, and Sir J. W. Dawson, Principal of McGill University; the last three of whom were honorary members. Of these the Rev. Dr. Martineau has been a special ornament to the Society from the notable services he rendered to it during his early life in Liverpool, and from the honour which his name has conferred upon it during his continued association with it until his death. Mr. W. H. Picton had proved himself an earnest working successor to his father, who had occupied so prominent a position in our Society for forty years, and the Society at large, as well as the Council, deeply regrets the premature termination of what promised to be so valuable a life amongst us. The Prize offered for competition among the students of University College for an English Essay was awarded to Miss Margaret Dickin; her essay on "Samuel Butler and his *Hudibras*" was read before the Society on 8th January, and is printed in the volume of *Proceedings*.

The Council again reminds the members that it is only by a continual influx of new members that the usefulness and efficiency of the Society can be maintained; a further decrease in the number of ordinary members would necessitate a curtailment of the annual volume of *Proceedings*, a step which the Council would be loath to have to take.

To the great regret of the Council, the Rev. E. N. Hoare, who was re-elected President at the end of the last

Session, has been obliged, through severe illness, to resign. The senior Vice-President was requested by the Council to take up the duties of the office until the Annual Meeting.

The Treasurer's Report was adopted.*

The Society then proceeded to elect a President in the place of Rev. E. N. Hoare, M.A., resigned. Dr. J. Murray Moore was unanimously elected.

The following were elected Vice-Presidents:—Mr. J. Hampden Jackson, F.R.G.S., Mr. A. Theodore Brown, Rev. E. A. Wesley, M.A.

Five new Members of Council in place of those retiring, and one in place of the late Mr. W. H. Picton, were then elected as follows:—Mr. T. L. Dodds, Rev. W. E. Sims, Mr. W. W. Jones, Mr. James Mellor, Mr. Victor E. E. Nevins, Mr. J. Maxwell McMaster.

After the re-election of the Honorary Members of the Society, the President read his Address on "The Birth of New Nations in the Reign of Queen Victoria." †

ORDINARY MEETINGS.

I. 15th October, 1900. The President, Dr. J. Murray Moore, in the chair. Dr. J. Birkbeck Nevins read a communication on the Separation of the Leaf from the stalk. Rev. W. E. Sims read his paper on "Charles Lamb." † Mr. W. W. Jones read an unpublished letter of Charles Lamb's, of great interest.

II. 29th October. Mr. J. Hampden Jackson, F.R.G.S., Vice-President, in the chair. The Hon. Treasurer shewed some curios from Ladysmith. The Hon. Secretary read a communication on Recent Excavations and Discoveries at Abydos. Mr. T. L. Dodds read a paper on "Casaubon, Huguenot and Scholar."

* See p. xxvii.

† See p. 1.

‡ See p. 27.

III. 12th November. The President, Dr. J. Murray Moore, in the chair. Dr. Newton shewed to the Society an interesting book on the Copernican System. Mr. R. C. Johnson, F.R.A.S., read a paper entitled "Notes on Observations of Total Solar Eclipses (1851 to 1900)."*

IV. 26th November. The President, Dr. J. Murray Moore, in the chair. Mr. G. H. Ball read a communication on certain Archæological Discoveries in Crete. Mr. William Wortley read a paper entitled "Ælfred the Great."†

V. 10th December. Mr. A. Theodore Brown, Vice-President, in the chair. Rev. Canon Armour, D.D., read a paper on "The Theory of Determinism in its relation to Human Nature."‡

VI. 7th January, 1901. The President, Dr. J. Murray Moore, in the chair. Dr. J. Birkbeck Nevins exhibited to the Society a Grammar of the Ojibway Indians. Mr. R. F. Green read a paper entitled "The Problem of Consciousness."§

VII. 21st January. The President, Dr. J. Murray Moore, in the chair. The President spoke on the anxiety present in all minds with regard to the health of Her Majesty the Queen. Mr. J. L. Ratcliffe read an essay "On Plato's Communistic Theory,"|| to which had been awarded the Prize offered by the Society to students of University College.

VIII. 4th February. The President, Dr. J. Murray Moore, in the chair. A Sub-Committee was formed to assist in drawing up an address of condolence, and an assurance of loyalty, to be presented to King Edward VII in conjunction with the Liverpool Philomathic Society. The paper which was to have been read was postponed.

IX. 18th February. The President, Dr. J. Murray

* See p. 163. † See p. 79. ‡ See p. 65. § See p. 138. || See p. 115.

Moore, in the chair. The President read the text of the Address to be presented to King Edward VII. Mr. J. Hampden Jackson read a paper entitled "The Public Revenues of the Ancient World." This was illustrated by 150 lantern slides.

X. 4th March. The President, Dr. J. Murray Moore, in the chair. Mr. R. C. Johnson, F.R.A.S., read a communication on Nova Persei, with especial regard to its spectroscopic examination. Mr. R. H. Case read a paper on "Some Seventeenth Century Memoirs."

XI. 18th March. The President, Dr. J. Murray Moore, in the chair. Rev. E. A. Wesley read a note on the production of artistic books in France. Mr. John Lee read a paper on "The Ethics of Common Life."*

XII. 1st April. The President, Dr. J. Murray Moore, in the chair. The President communicated to the Society the reply of His Majesty to the Address presented by the Society. Dr. J. Birkbeck Nevins read a communication on the tameness of South African animals. The chair was then taken by Mr. A. Theodore Brown, and the President read a paper on "Longevity and Centenarianism."

XIII. 15th April. The President, Dr. J. Murray Moore, in the chair. The election of President for the ensuing session took place, and Rev. E. A. Wesley, M.A., was unanimously chosen. A vote of thanks was passed to Dr. J. Murray Moore for his services. Dr. Newton read a paper on "The Woodcut Illustrations in Early Printed Books." A large number of interesting and valuable volumes were exhibited. Rev. W. E. Sims read a paper entitled "Concerning Books and Readers." Dr. J. B. Nevins read a paper on "The Shape and Weight of the Earth."

* See p. 51.

ORDINARY MEMBERS ELECTED DURING THE SESSION.

Mr. G. G. Gilchrist, Rev. H. J. Chaytor, M.A., Right Rev. the Lord Bishop of Liverpool, Mr. E. G. Narramore, L.D.S., Rev. R. B. Tollinton, M.A., Mrs. Blackledge, Dr. C. G. Lee, M.R.C.S., Rev. T. B. Lancelot, M.A., Ven. Archdeacon Madden, M.A., Miss E. A. Twigge, Miss M. F. Twigge, Prof. L. R. Wilberforce.

Attendances at the meetings of the Society were as follows: 56, 62, 47, 60, 49, 76, 36, 50, 87, 31, 37, 43, 46.

THE FOLLOWING WERE ELECTED HONORARY MEMBERS OF
THE SOCIETY DURING THE SESSION:—

Richard Garnett, LL.D., C.B.

Rev. W. W. Skeat, Litt.D.

PAPERS READ DURING THE SESSION.

THE BIRTH OF NEW NATIONS DURING THE VICTORIAN REIGN.

By JOHN MURRAY MOORE, M.D., M.R.C.S., F.R.G.S.

PRESIDENT.

"*We are a Nation*," I heard the orator of Canada, Sir Wilfrid Laurier, say at the impressive climax of an eloquent speech at the Banquet to the Colonial Premiers, given in our Philharmonic Hall, in June, 1897. This utterance sank deep into my mind, and has given me the text upon which I have founded the title of this address which I have had to compose at rather short notice, owing to the sudden illness of my much respected predecessor in the chair.

During the century now drawing to its close, the notable features and events which have made for the progress—the true progress—of humanity, have been the wonderful discoveries of science and inventions of mechanism; the improved methods of preserving public health and checking epidemics; the resuscitation of small nations; the spread of liberty and fraternity in civil, political, and religious life; the increased intercourse of nations by international exhibitions; the modification of monarchical and imperial governments by democracy; the federation of British Colonies; and last, and most striking of all, as it seems to me, the enormous and still-continuing expansion of the British race.

The vastness, variety, loyalty, and unity of the glorious heritage of the modern Briton are worthy of our special attention. How is it that we, a mixed race of Anglo-Saxons, Normans, Danes, French, Kelts, and Teutons, living on two small islands, with the sea for our highway,

have utilised for trade and settlement the discoveries of Columbus, Vasco da Gama, and Tasman, and have firmly established ourselves in every part of the globe, while the countries which gave birth to these illustrious men have remained insignificant or dwindled into decay? It is because Providence has endowed us with the best qualities for colonizing of any nation. We ought gratefully to say, as we look upon the parts of the map of the world painted red, in the words of our City of Liverpool motto:—

"Deus nobis hæc otia fecit."

Though our expansion—latterly, indeed, the necessary consequence of an overflow of population, which is the primitive cause and origin of most colonies—has excited the jealousy and dislike of the European powers, we are not a military nation, with a huge standing army always eager to take the field and extend its sovereign's frontier; nor are we pirates, filibusters, or land-grabbers, as our French neighbours accuse us of being. For history shows that, on good cause shown, Britain can restore legitimately-gained territory as gracefully, as she can hold it firmly. During the last two centuries we have relinquished Minorca, Tangiers, the Ionian Islands, Manilla, Java, Heligoland, and, at various times, all the West Indian Islands now held by other powers. Our governments have refused to accept Hawaii, Samoa, the Transvaal, Delagoa Bay, and other places. Yet it is not a boast, but an actual fact, that we can Anglicise any part of the world—arctic, temperate, or tropical, by settlement—with both immediate and lasting benefit to its original inhabitants.

From the planting of our very earliest colony, in Newfoundland, by Sir Humphrey Gilbert, in 1583, down to the present year of grace, 1900, when we add 170,000 square miles to Greater Britain by the annexation of the two

Boer Republics, her expansion has been so continuous and so great, that few of us can realise that to-day our empire outranks, both in area and population, even Russia, the "Colossus of the North" When Queen Victoria acceded to the throne, in 1837, she reigned over 2,621,000 square miles of territory, peopled by 130 millions, of whom the Metropolis contributed a million and a half. Sixty years passed, and the Diamond Jubilee of this same beloved sovereign, more deeply enshrined than ever in the hearts of her subjects, was enthusiastically celebrated by many nationalities, in number (according to Sir Robert Giffen) 407 millions of souls, occupying twelve million square miles of land. London had grown into a gigantic city of five million inhabitants; and the total trade of the British empire was valued at £750,000,000 per annum. The unity and loyalty of our ten million kinsmen across the seas have been elicited in a most unexpected and remarkable way by the deplorable but inevitable war in South Africa. Take one striking fact as an illustration before passing on. Far-off New Zealand, a most peaceful and unmilitary colony, leaped to arms at the appeal of its Premier, and has sent out to the Cape two thousand of its finest youth, well-equipped, mounted, and disciplined. This contingent is in the proportion of one in 326 of the total population of the colony. A similarly proportionate force in Great Britain would amount to a body of 117,000 soldiers! Not without many lesser wars has our empire attained this stupendous development. But this we can assert, that in Europe we have never shed blood for the extension of territory, and to this day, Germany, Italy, Austria, Spain, Portugal and the Low countries have never repaid us for putting down Napoleon, the Attila of Europe, nor has Turkey in the slightest degree compensated us for the Crimean war.

During the 19th century British statesmen have made many useful and generally successful experiments in different ways of governing our distant possessions. With a success which excites the wonder of the foreigner and the admiration of the American, our administrators have solved most difficult problems,—of maintaining the peace between alien and hostile races in the same country; of controlling turbulent adventurers; of enforcing respect for life and property; and of uniting under one government many widely-scattered settlements. Not always has the success of these governmental experiments been due to the Ministers of State. More often the ability, sagacity, courage, and promptitude of our pioneer governors and colonists, ignoring the ignorance and ineptitude of Downing Street, have scored these victories of peace. The striking success of Sir Stamford Raffles, cousin of the erstwhile venerable minister of Great George Street Chapel, as Governor of Java, which was becoming a British colony of great value, when it was abruptly retroceded to Holland, in 1814, and his clever selection of Singapore, now the most flourishing seaport of the East, were not honoured or rewarded when he retired from office. Another great empire-builder, Sir George Grey, of New Zealand, was continually at variance with the Colonial office. Yet his masterly constitution of New Zealand, in 1852, was the first *complete* scheme of representative and responsible self-government actually put into operation. And in 1858 he drew up a scheme of government for a United South Africa, the adoption of which would have spared us the sad wars and rebellions that have since followed.

Without dwelling on the history of colonial expansion, which has been admirably summed up by Professor W. H. Woodward of this city in his well-known Manual, I will

shortly describe the development of the principal forms of colonial government in later years.

In addition to India, which has a special government, Greater Britain contains fifty-six distinct colonies, territories, protectorates, and naval and military stations, of which twenty-four have been added since Her Majesty's accession. Tennyson's profound saying,

"The thoughts of men are widened with the process of the suns,"

is illustrated by the disappearance of the old aristocratic and autocratic types of governor and government during the past half-century. Our ministers of State, having pondered over the causes of the successful revolt of the thirteen American colonies in 1776, and alarmed from time to time at outbreaks of discontent in Canada and Australia at tyrannical orders from home, arbitrary imposts, or unpopular governors, have made the yoke of Home control easy, and the fiscal burdens light. It is now an accepted principle that every colony shall levy and control its own taxation. Another great principle followed by all governments, whether Conservative or Liberal, is that a new country or group of settlements, or a mixed community of natives and colonists shall be *gradually educated up to* the condition of readiness for complete responsible self-government, under the Sovereign of Great Britain; and that a demand for autonomy shall always originate from the colony itself. Eleven of our colonies—the latest being Natal, in 1893—have attained this privilege. I shall show, in the course of my remarks, that this is the form of all forms which is best suited to our own countrymen, for it combines perfect individual freedom with a stable central authority, and manhood suffrage with loyalty to the monarch.

The following five types of government, arranged in

order from the simplest up to the most complex, comprise all our possessions, and are for the most part well suited to the peculiarities of each.

First, a protectorate, where the king or chief rules according to native customs in so far as they are not inhuman, under the advice and guidance of a British Resident and staff. Of this type are Egypt, British East Africa, and the Malay States. In case of external war, Britain, if appealed to, must fight for her "protected" ally.

Second, personal autocratic government by a military or naval officer, as at Gibraltar, Aden, and St. Helena.

Third, a Crown colony, where the governor, appointed by the Crown on the recommendation of the Colonial or Foreign secretary, holds supreme authority, but is assisted by an advisory council, formed of the leading officials of the colony, or by two councils, one the executive, and the other the legislative, composed of both nominated and elected members. Ceylon, Hong-Kong, Malta, and Cyprus are examples.

Fourth, government by a chartered company of British origin, such as North Borneo, British Central Africa, and Rhodesia. In all modern charters the rights of the aborigines are properly secured.

Fifth, representative and responsible self-government, consisting of (a) a governor appointed by the Queen, and approved of by the colony; (b) an executive council chosen from members of the legislature; (c) a parliament on the model of that of Westminster, where the House of Peers is represented by a Legislative Council or Senate; and a House of Commons, of representatives elected by the people. The laws passed must not be absolutely inconsistent with those of Great Britain: otherwise full powers are granted of taxation, domestic legislation, military and

naval defence, etc., and of federation with other British colonies or possessions.

No fear need now be entertained that any self-governed colony, such as one so intensely democratic and socialistic as New Zealand for instance, will split off from us in order to become a republic, or to ally itself with some other great power. They have and enjoy the most perfect freedom already, and of their attachment to the old country we are having continual proof.

For the progressively democratic forms of government which are being framed in our colonies we have to thank the United States. That noble constitution, drawn up be it remembered by once-loyal Englishmen, has survived the shock of civil war, the cancerous disease of slavery, many outbreaks of lawlessness, and the corruption of professional politicians. It has admitted, with great precaution, fifteen amendments, to its improvement. But it is the most conservative of all existing republics, full of checks and counter-checks, lest rash innovation should shake its stability.

Now the principal object of my paper is to describe the origin and constitution of the two young nations of British origin which were born, the one upon the 1st July, 1867, the DOMINION OF CANADA—and the other, whose legal birthday, I understand, is fixed by Royal Order in Council for New Year's day, 1901, the first day of the twentieth century—THE COMMONWEALTH OF AUSTRALIA. I wish to show you how skilfully their founders have avoided the omissions and the defects of even the American Constitution, one of which, the vagueness of the relation between Federal and State-rights, led to the sanguinary conflict between North and South, from 1861 to 1865.

For the origin of the Dominion of Canada* I must

* The word is not used for the first time in America, for the colony of Virginia was called "The Old Dominion," and we read in a petition to the King from the Philadelphia Convention, in 1774, of "The Dominion of Canada."

take you back to the year of the Queen's accession, 1837. Canada was then composed of two provinces, with separate governments, and working under an old-fashioned constitution, dating from 1791, which she had quite out-grown.

In 1837 a rebellion broke out in both Upper Canada and Lower Canada, the leaders being W. L. Mackenzie, in Ontario, and Papineau, in Quebec. The Presbyterians of Ontario regarded as a grievance the extensive lands kept out of settlement as an endowment for the Anglican Church, and the Crown Officials were deaf to their complaints. In Quebec, the French, all Catholics, took alarm at the growing power of the English and Scotch Protestant immigrants. Certain politicians of the United States took advantage of the discontent to urge Canada to join the Union. We came near losing Canada in 1837. As I have pointed out in my paper on "Tennyson as a National Poet," our great laureate's stirring verses rallied up the loyal majority and helped to save the situation.

But the Home Government of the day, of which Lord Melbourne was Premier, sent out the Earl of Durham, a wise and experienced Liberal peer, as Governor-General and High Commissioner, to pacificate the colony.

In his famous report, now a classic document of colonial history, he stated that racial and religious animosities and constitutional grievances were the twin sources of the discontent. He recommended the immediate granting of a full measure of representative government; elective bodies for local affairs; an inter-colonial railway; and the immediate union of the two provinces of Upper and Lower Canada under one legislature, pending a broader federation of the whole group of territories.

The Re-union Act of 1840, passed by the Liberal Cabinet, in which Lord John Russell was Colonial Secretary, united the two provinces, and conceded to the

Canadians all the reforms they had asked for. This year was memorable for the addition of New Zealand to Her Majesty's dominions. This constitution of 1840 was the earliest instance of colonial autonomy, though less complete than that of its sister colony in 1852, and seems to have initiated the peaceful and prosperous career which Canada has since pursued. Under it the disputes and jealousies between the Catholic French and Protestant British calmed down, and the surrender of the "Clergy Reserves" lands for educational and social uses removed Presbyterian discontent.

It may be here remarked that in no subsequent colonial constitution has it been proposed to subsidise or to endow any one form of religion with lands or money belonging to the State.

This constitution worked well, but Canada grew in population, even in distant parts, and it was felt that some larger framework was required to keep its scattered units under one central control.

After many conferences between delegates from the various provinces, the *British North America Act* of 1867 formed a grand federation of the four chief provinces then existing, namely, Ontario, Quebec, Nova Scotia, and New Brunswick, under the name "Dominion of Canada." The constitution of the Dominion of Canada is declared to be similar in principle to that of the United Kingdom; and the executive government and authority continues to be vested in the Queen, her heirs and successors on the throne. One Parliament for Canada is established, consisting of the Queen, as represented by the Governor-General (appointed for six years), an Upper House styled the Senate, and a House of Commons elected by the people. Parliament is to meet annually at Ottawa, and its term is to be five years.

A member of the Senate must be thirty years of age at least, and be possessed of £800 or its value in property. Each senator is nominated for life by the Governor-General.

The number of the original Senate was seventy-two, and now it is eighty-one. The House of Commons, whose members are styled "M.P.," is to be elected by voters, qualified according to the franchise in each province. It numbered 181 when it first met on the 6th of November, 1867. It was the expressed intention to have the Lower house always double the strength of the Upper house, so that in the case of a joint sitting there might be no "dead-lock," but that the Lower house might preponderate. This provision is followed in both the Dominion of Canada and the Commonwealth of Australia.

Now, however, that the Canadian House of Commons, by the union of every part of British North America, except Newfoundland, amounts to 213 members (the Senate remaining eighty-one), its preponderance is not only assured, but rather excessive.

The allocation of members to each province is re-adjusted after each decennial census, beginning with that of 1871. But the curious provision is made that Quebec province shall always have the fixed number of sixty-five members, and that at each re-adjustment, such a number of members shall be assigned to each of the other provinces as shall bear the same proportion to its population as the number sixty-five bears to the population of Quebec. The object of this law is to prevent the House of Commons from becoming a cumbrous, unwieldy body, from the constant growth of population. Each member of both Senate and House of Commons is paid £200 for a session of thirty days, with travelling expenses,* etc.

* Payment of members is the rule in all our free self-governing colonies.

The House of Commons, in session, elects its Speaker, who has no vote, except in the case of a "tie," when he may give a casting vote. The Speaker of the Senate, nominated by the Governor-General, may vote on any question, but in case of equality of the voices, has no casting vote, but must give the decision in the negative.

The House of Commons alone can originate money votes, or impose taxation, but with this difference from our own House of Commons, that every such bill must be introduced by a message from the Governor-General approving of it.

The Executive Government of the Dominion consists of the Governor-General, assisted by the Queen's Privy Council for Canada, out of which thirteen Cabinet Ministers are selected to preside over the thirteen departments of state.

The Governor-General nominates these ministers from the party in majority of the House of Commons, and they are responsible to Parliament.

Each Province constituting the Dominion is provided by this Act with a local Government of a nearly uniform type, consisting of a Lieutenant-Governor, Executive Council, and Legislature. The Provincial laws passed after the year 1867 must be consistent with the Dominion laws, or be, *quoad differentia*, disallowed.

To save time and space, I may state in general terms that, while the Federal Government controls all matters essential to the general development, permanency, unity, and defence of the whole Dominion, the Provincial Governments retain the management and improvement of all local affairs.

The framers of this Dominion of Canada Act have wisely avoided one defect of the United States Constitution, namely, the undefined relationship of State rights

to Federal powers. Whereas by Art. 10 of the U. S. Constitution all powers not expressly conferred upon the President, Executive and Congress are reserved to the individual states—hence the plea of the Confederates for the maintenance of slavery—in the Dominion Constitution the reverse obtains, the rights and powers of the Provincial Governments being distinctly specified, while those of the Federal Executive and Parliament cover the whole ground of legislation not so expressly reserved to the Provincial authorities.

The Supreme Court of Canada, established in 1875, consisting of a Chief justice and five puisne judges, is the Court of Appeal for all controversies between Provinces and the Dominion. But though its decision in all criminal cases is final, in civil and political cases a final appeal is allowed to the Judicial Committee of the Privy Council of England. During the past thirty-three years very few appeals have been carried up to the Privy Council, but I venture to mention one decision by that august body of special interest to temperance reformers.

In the year 1877, the legislature of Ontario, formerly Upper Canada, passed a Liquor License Act of moderate stringency. A Mr. Hodge, of Toronto, was fined for infringing a certain regulation made by the local Licensing Commissioners, and appealed to the Court of Queen's Bench, who quashed the conviction. Next, the Court of Appeal for Ontario reversed this decision, and affirmed the conviction. Finally, the appellant, Hodge, carried the case to the Privy Council, basing his appeal on the ground (1) that the Legislature of Ontario had no power to pass any act to regulate the liquor traffic, because it infringed Sec. 91 of the B. N. A. Act, which exclusively reserved to the Dominion Parliament "the regulation of trade and commerce"; and (2), that the subject of this Provincial

Act did not come within any of the classes of subjects assigned by Sec. 92. Their lordships dismissed the appeal, confirming the conviction, holding that the Ontario Parliament acted within its powers in making municipal regulations of a local character for the good government of taverns, etc., licensed for the sale of liquors, etc., and for the repression of drunkenness and disorderly conduct.

The Dominion Parliament also passed the Canada Temperance Act of 1878, to promote uniform legislation on the liquor traffic in all the provinces; and made its adoption voluntary by any county or town. It is now a law for the whole Dominion, of a "Prohibition" character, but only in action in the localities or districts which have taken it up.

The working out of this great scheme for the past thirty-three years has been continuously harmonious, except for the rebellion at the Red River, headed by Louis Riel, in 1870, and the outbreak of the Indians and French half-breeds, under the same rebel, in the North West territory, in 1885. The completion of the Canadian Pacific Railroad, in 1886, the construction of which was made an absolute condition by British Columbia of her union with the Dominion, has vastly accelerated the unification of Canada. Every province and territory as it joins the Dominion is provided with a suitable government, and representatives in the Federal Parliament. Even the wild Yukon district is now orderly, under Commissioner Ogilvie and his Mounted Police. Immigration increases, and new mineral discoveries are being made all the time. Like the mother country, Canada opens her arms to the distressed and oppressed of every nation. The Finns, the Icelanders, the Dukhobors, the Stundists, and the Roumanian Jews find there a welcome and a home. Well-deserved indeed was the eulogium pronounced upon

the Dominion by the Marquis of Lorne, in his farewell speech, in May, 1883 :—"A judicature above suspicion; self-governing communities entrusting to a strong central government all national interests; the toleration of all faiths, with favour to none; a franchise recognising the rights of labour by the exclusion only of the idler; the maintenance of a government not privileged to exist for any fixed term, but ever susceptible to the change of public opinion, and ever open, through a responsible ministry, to the scrutiny of the people;—these are the features of your rising power."

And now let me describe, as concisely as may be, the origin of the Federation movement in the great island-continent of Australia, every one of whose six colonies has acquired the boon of responsible government since the year 1856, when the first Australian Parliament met in Sydney, elected for New South Wales, called the "Mother Colony." About the year 1884 leading Australian statesmen, stimulated by the rapid growth, solidarity, and prominence in the empire of a United Canada, took up the question of Australian Union. Mr. W. B. Dalley, who got up the New South Welsh contingent of troops for the Soudan, and Sir Henry Parkes headed the movement, and in 1886 the first Federal Council for Australasia met at Hobart, Tasmania, five colonies only being represented. Mutual jealousies being gradually smoothed away by press articles and public speeches, the next two conferences, in 1890 and 1895, were more complete and satisfactory. Finally, a great Australasian Federal Convention drew up a complete Draft Constitution in 1898 for submission to a *plébiscite* in each colony. Every colony has had every possible opportunity of understanding, sifting, amending, accepting or rejecting this

very important measure. Having passed through this six-fold ordeal, "THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT," as it is called, passed through the Imperial Parliament in June of this year, and received Her Majesty's signature on the 9th July, 1900.

The preamble of this Act is impressively worded:—"Whereas the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the constitution hereby established :

"And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian colonies and possessions of the Queen. Be it therefore enacted," etc., etc.

The terminology of the body of this Act is more after the model of the American Union than that of the Canadian Act. Each colony is called a "State," and the "Original States" are those which shall have united before the proclamation of the Commonwealth.

As Western Australia voted in July for Federation, in the last stage, namely, on the *referendum* or *plébiscite*, that colony, its Agent-General informs me, will be regarded as an "Original State."

Clause 5 informs us that, "This Act, and all the laws made by the Parliament of the Commonwealth, shall be binding on the courts, judges, and people of every State, and every part of the Commonwealth, notwithstanding anything in the laws of any State; and they shall be in force on all British ships, except those of the Navy, whose ports of first clearance and of destination are in the Commonwealth" (abridged).

The Federal Parliament shall consist of the Queen,

acting through her representative, the Governor-General of Australia, a Senate, and a House of Representatives. Here we notice the American style of designation.

The Senate, or Upper House, is elected directly by the people, six being chosen for each Original State by the whole body of electors voting as one electorate.

The Senate of the Commonwealth is thus differentiated from that of the United States, where senators are selected by the Legislature of each State; and from the Upper House of the Canadian Dominion where the senators are nominated by the Governor-General. There is no property qualification for a Senator, as in the Dominion. For both Senator and Representative the qualifications are merely those of an ordinary elector in each State, namely, adult age, three years' residence in the Commonwealth, and being a natural-born or naturalized subject of the Queen. A Senator's term of office is six years. The Senate is a permanent body, only dissoluble in the event defined by Clause 57, of a prolonged disagreement with the Lower House, causing a block of legislation.

This Senate elects its own "President," whereas, in Canada, the Speaker of the Senate is appointed by the Governor-General, and in the United States the Vice-President of the Republic is, *ex-officio*, the President of the Senate.

The Lower House of the Commonwealth, called "House of Representatives," is to be elected by the people on the lowest franchise existing in each State, and its term is to be three years. The principle of "one elector, one vote" is adopted. Clause 41, to protect the right of women to vote which now exists in South Australia and in New Zealand, provides that no adult *person* who has acquired a right to vote for the more numerous House of the Parliament of a State, shall be prevented by any law of

the Commonwealth from voting for either House of the Commonwealth Parliament.

Each Senator and Representative will receive £400 per annum. The first Senate of the Commonwealth will have thirty-six members, and the first House of Representatives, seventy-five. To the Lower House, New South Wales will send twenty-six members; Victoria, twenty-three; Queensland, nine; South Australia, seven; Tasmania and Western Australia each five. The number of Representatives chosen in the several States shall be in proportion to the respective numbers of their people, but aboriginal natives, and persons of any race disqualified by any State law from voting, shall not be counted. This provision has distinct reference, I believe, to the Chinese and Japanese. It is expressly declared that the number of Representatives shall be twice the number of Senators, in order that the preponderance of voting power may be given to the Lower House in the case of a Joint Sitting, while the Senate is still to be sufficiently large not to be regarded as a mere Council. As to legislative power, the Senate's duty is revision rather than initiation. Laws appropriating revenue, or imposing taxation, shall originate in the Lower House, and, in the former case, only if the purpose of the appropriation has been recommended by message of the Governor-General. The Senate is debarred from even amending proposals of taxation or of money votes for the ordinary annual services of the Government, nor may it amend any proposed law so as to increase any charge or burden on the people.

The Federal Capital is to be situated in a special district of 100 square miles (like Washington, the U. S. Metropolis, in the District of Columbia) within the State of New South Wales, and distant not less than 100 miles from Sydney.

The Executive Government of the Commonwealth is vested in a Governor-General and a Federal Executive Council chosen by him, from which he will choose seven Ministers of State. The Governor-General, who will receive £10,000 a year, will be Commander-in-Chief of all the naval and military forces of the Commonwealth, and will have a large amount of personal patronage at his disposal, for in him will be vested "the appointment and removal of all (other) officers of the Executive Government until the Parliament otherwise provides." The first to occupy this high and very responsible office is a nobleman who won the good opinion of the colony of Victoria as Governor, namely, the Earl of Hopetoun, K.T., G.C.M.G., whose selection by the Queen has been received with enthusiasm by the Australians. He will make Sydney his temporary residence. Great *éclat* will be given to the new Commonwealth Parliament, by the permission given by the Queen, just announced, that her grandson, the Duke of York will open it in Her Majesty's name. He will be accompanied by the Duchess of York, and it is expected that the royal pair will visit most of the Australasian colonies, New Zealand included, and perhaps return home across Canada.

Her Majesty's message, with its finely-worded appreciation of Colonial loyalty, has sent a thrill of joy throughout Australasia. I quote a few lines:—

Although the Queen naturally shrinks from parting with her grandson for so long a period, Her Majesty fully recognises the greatness of the occasion which will bring her colonies of Australasia into federal union, and desires to give this special proof of her interest in all that concerns the welfare of her Australasian subjects. Her Majesty at the same time wishes to signify her sense of the loyalty and devotion which have prompted the spontaneous aid so liberally offered by all the Colonies in the South African war, and of the splendid gallantry of her Colonial troops.

After his arrival at the temporary seat of Government, the first duty of the Governor-General will be to fix a date or dates upon which the posts, telegraphs, telephones, lighthouses, quarantine, and defence forces of each of the six colonies shall become transferred to the Commonwealth; but the departments of customs and excise in each state shall immediately pass to the Commonwealth.

A boon to travellers and commercial men who have felt the great inconvenience of baggage examination and duties levied on the borders or seaports of every separate colony will be the promise in the Act that, within two years from its establishment, the Commonwealth will impose uniform customs and duties throughout Australia, so that there will be absolutely free trade and commerce within the limits of the Commonwealth, whether by land or sea.

After five years of uniform duties, the Commonwealth will pay out to the several States, on a fair basis, its surplus revenue. But clause eighty-seven, "Braddon's blot," so-called by some, inserted to protect the weaker protectionist States, hampers this provision by ordaining that "during the first ten years, the Commonwealth Government shall not expend annually more than one-fourth of its net revenue from customs and excise, the balance being returned to the States, or applied towards payment of interest on colonial debts taken over by the Commonwealth." No doubt this heavy liability will have to be met by special taxation, for by clause 105, Parliament *may* take over from the States their public debts, and may convert, renew, or consolidate them, or any part thereof, being safe-guarded by an indemnity from each State, and strict provision for the regular payment of interest. So that our holders of Colonial bonds need not feel at all apprehensive.

To each federated State are left its lands, mines,

railways; non-federal public works; police, education, judiciary; the power of direct taxation and of borrowing money for State purposes; and the internal government of the State generally.

Owing to differences of gauge, of fares, and of management, the Commonwealth does not at once take over the State railways. But an Inter-State Commission, such as exists in the United States, is appointed to arrange trade and commerce, and to prevent any one State from interfering with the commercial interest of any other State by preferential railway rates, etc.

To the Commonwealth exclusively will belong the raising of naval and military forces; the coinage; the power of general taxation; the acquisition of railways or other property from any State; railway construction and extension; conciliation and arbitration; the relations of the Commonwealth with the Pacific Islands (lately a burning question in Queensland), and no less than thirty-four other departments of Government.* "When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former be invalid." (Clause 51).

Careful and wise provisions are made for the admission of new States, and for any proposed alteration of the Constitution (Clauses 121 to 128). Under the head of "Judicature," we find that this Act creates a Federal Supreme Court, to be called the High Court of Australia, consisting of a Chief Justice, and not less than two other Justices. The original Bill made the mistake of making this High Court of Australia the *final* Court of Appeal in all cases, thereby depriving the right of a litigant to

* I may mention that the large expenditure of the new Commonwealth is amply guaranteed by the fact that the total revenue of the six federating colonies amounted in 1896 to over £26,000,000.

carry up his appeal to the Privy Council in London. The Chief Justices of most of the colonies strongly opposed this abolition. "The unity of final decision," wrote Sir Henry Wrixon, "preserves an unity of law over the whole Empire." My friend, Sir James Way, Chief Justice of South Australia, who kept me well informed on the progress of the Commonwealth Bill, echoed the thought of most colonists, in writing:—"*This right of appeal to the Privy Council is the most valuable privilege of our common citizenship, and one of the strongest ties uniting the Empire.*"

The struggle over the famous Clause 74 is fresh in your minds. Mr. Chamberlain eventually obtained the consent of the federating colonies to retain this cherished privilege of appeal to the Privy Council, with certain limitations. These limitations are, briefly, that no appeal to London shall be permitted upon any constitutional question arising between the Commonwealth and the States, unless certified to by the High Court. In other matters, "this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her royal prerogative to grant special leave from the High Court to Her Majesty in council. The Parliament may make laws limiting the matters in which such leave may be asked," but they "shall be reserved by the Governor-General for Her Majesty's pleasure.

It seems strange to us in England that New Zealand has not joined this noble confederation. Although I am in touch with the public opinion of that colony, as expressed in its newspapers, I cannot explain its present attitude towards the Commonwealth. In my opinion, its recent handsome surplus of £560,000; the confidence shown in it by the Colonial office in annexing to it various groups of islands, and giving it the Protectorate of Raratonga;

and the opposition of its masterful Premier, Mr. Seddon to the yielding up of its revenue, defence forces, etc., to the Commonwealth, which would be necessary on entering the Confederation — all these and other considerations influence New Zealand in holding aloof, for a time. But I believe that eventually she will join it on favourable terms.

Just as this Address is being printed, I learn by cable that the Fiji Islands desire federation with New Zealand — not with Australia, — a circumstance which may contribute to the hesitation of the latter colony to join the Commonwealth.

The constitution of this Commonwealth of Australia has its defects, easily remediable by further legislation, but on the whole it is a fine piece of political construction; a welding together into a homogeneous whole of hitherto divergent colonies, to be welcomed by all patriotic Englishmen as a great factor in the maintenance of the integrity of the Empire. Nay, more, the new Commonwealth (well-named) is an earnest of the growing faith in Imperialism; a living proof of sturdy independence; and a striking example of a nearly perfect system of colonization.

The advantages of federation in geographical groups has been so conspicuously shown by the examples of Canada and Australia, that it becomes only a question of time when the South African colonies and possessions will unite; the West Indian Islands will join our Central and South American colonies, and the Pacific Islands unite with New Zealand, Australia, or the Fijis as a centre. Professor Seeley's pungent questions, asked in 1883, are now receiving an emphatically affirmative answer: — "Will Greater Britain rise to a higher form of organisation? Will the English race, now divided by several oceans, devise some scheme like that of the United States, under

which full liberty and solid union may be reconciled with unbounded territorial expansion?" The first steps were taken towards this object by the Jubilee Conferences of the Colonial Premiers with our Premier and Secretaries for the Colonies in 1887 and 1897. The movement is going on: we are by safe and steady progression advancing towards the still grander ideal of Imperial Federation. Why should there not be an Imperial Council, meeting annually in London, in which India and every colony and federation should be fully represented? Already in the burning question of the re-settlement, on a firm and just basis, of South Africa, the voice of a United Canada and a United Australia reaches Downing Street with a clearness and decisiveness which isolated colonies could not give. Those of our children who have sealed a covenant of blood with us on the South African veldt have a right to a voice in the making of peace, and the future settlement of the country. "What we did," said the Canadian Premier in a recent speech at Ottawa, justifying the despatch to the war of Canada's large contingent, "we did of our own free will, and as to future wars, I have only this to say, that if it should be the will of the people of Canada to take part in any war of England, the people of Canada will have their way. Of course, if our future military contribution were to be considered compulsory—a condition which does not exist—I would say to Great Britain, 'If you want us to help you, call us to your councils.'"

By such an Imperial Council, a family bond of union between the mother and her scattered family, Britannia will avoid the fate of Imperial Rome, where only the military power kept many alien nationalities together in a mechanical union. What we aspire to is a union of hearts. And as long as our beloved Queen-Empress lives, she will be the uniting bond of love. As to the future, I

am an optimist. The character of my fellow-countrymen, formed during many centuries by rational liberty, strenuous labour, manly self-reliance, and earnest religion, has *not* deteriorated. The successful quieting down and repopulation of unhappy South Africa must depend upon the character of the men and women who settle there, rather than upon schemes of government, however wise and just.

For—

What constitutes a State?
 Not high-raised battlement, or laboured mound,
 Thick wall, or moated gate;
 Not cities proud, with spires and turrets crowned,
 No; men, high-minded men
 Men who their duties know,
 But know their rights, and knowing, dare maintain;
 Prevent the long-aimed blow
 And crush the tyrant, while they rend the chain—
 These constitute a State.

With assured peace, the racial animosities in South Africa will disappear in time, and its industrial progress will advance apace. We shall all, I am sure, whatever our views, echo the noble wish of our beloved Sovereign, expressed in her last prorogation speech. Speaking of the annexation of the Orange Free State, now the Orange River Colony, Her Majesty said:—"I trust that this will be the first step towards the union of races, under institutions which, while establishing from the outset good and just government for all, may be, in time, developed so as to secure equal rights and privileges in my South African dominions."

It seems to me that both the Constitutions which I have described will afford useful suggestions for a future "UNITED BRITISH SOUTH AFRICA."

I must now bring this lengthy address to a close, with a word on a subject nearer home.

If our excitable neighbours across the Channel were to carry out their threat of invasion, a danger which at least the *Spectator* thinks impending, I make no doubt whatever that the Anglo-Saxon race throughout the world would assert its solidarity by helping the mother country. Even in the United States, with its hostile Irish party and its keen commercial rivalry, there is a strong feeling in the heart of the true American of love to the land whence his ancestors sprung. I am certain, from an intimate knowledge of the best classes of educated Americans, that these stirring lines of H. L. G., a Californian poet, express a real sentiment which would inspire prompt action were our dear old country violated by a foreign host:—

Mother England! Mother England! down the ages blood will tell,
From the spears that baffled Cæsar to the field where Symons fell.
Down through rugged Gael and Saxon, brawny Norse and stalwart
Danes,
Still the blood of Bruce and Cromwell tingles in our Yankee veins.

Mother England! Mother England! if all Europe rise and roar,
We will meet them, we will beat them, on the sea and on the
shore;
Then our stalwart Anglo-Saxons, side by side, on land and sea,
Shall march on and sail together to one world-wide destiny.

And this “world-wide destiny” of Anglo-Saxondom is not to promote war, but to teach the dark races peaceful arts, and the white races friendly commerce; and by spreading a *living* Christianity to prepare all the world for the coming Era of Millennial Peace.

CHARLES LAMB.

BY REV. W. E. SIMS.

NEARLY seventy years have passed away since the "Gentle Elia" was laid in Edmonton Churchyard, where, amid grass-covered mouldering heaps, a stone with inscription still legible, indicates to the pensive disciple of Hervey indulging in *Meditations Among the Tombs* his quiet resting place.

But while in the busy years that have since elapsed many literary lights have kindled and faded into darkness, the reputation of Charles Lamb shines with undiminished lustre, a planet in the firmament of letters. His essays take rank among English classics. His poems, criticisms, and letters are edited and re-edited. His ephemeral squibs, sayings, jokes, and anecdotes are collected with eager relish. The very "dust of his writings" is treasured as fine gold. Amateur collectors and lovers of rarities pore over catalogues at book sales in search of first editions. And Elia has taken his place among the "masters of laughter and tears."

Many authors of excellent repute do not awaken in us any personal interest. We read their works without desire to penetrate the mystery of the writer's personality. We do not wish to know where they lived, nor what their appearance, nor wherewithal they were clothed. They are mere abstractions, the title-pages of their books acquaint us with their names, and from the same source we gather the names of their publishers; both facts are on the same

dead level of the uninteresting. We "care for none of those things."

But the works of Charles Lamb are read not merely because of their subject matter, they derive an additional interest as a revelation of himself, they are stamped with the impress of a remarkable personality. As one of his friends observed, "the syllables lurk up and down the writings of Lamb which decipher his eccentric nature, his character lies there dispersed in anagram, and to any attentive reader the regathering and restoration of the total word from its scattered parts is inevitable without an effort." This interpenetration of his work with subjective allusion partly accounts for its unique quality. "Nobody (says Professor Saintsbury) has ever succeeded in imitating him even in his most obvious quaintnesses, while the blending of those quaintnesses with a pathos that is never mere sentiment is a secret not merely undiscovered yet by imitators, but escaping even any complete analysis."

Charles Lamb's father was confidential clerk and general factotum to a Mr. Samuel Salt, a barrister of the Inner Temple, an easy, good-natured man, who left the management of all his affairs to his humble friend. "He was not to be trusted with himself with impunity." "Lovel took care of everything. He was at once his clerk, his good servant, his dresser, his friend, his 'flapper,' his guide, stopwatch, auditor, treasurer. He did nothing without consulting Lovel, or failed in anything without expecting and fearing his admonishing. He put himself almost too much in his hands, had they not been the purest in the world." Under the name of Lovel the elder Lamb is thus described by his son. "He was a man of an incorrigible and losing honesty;" "the liveliest little fellow breathing;" "possessed of a fine turn for humorous poetry;" "moulded heads in clay or plaster of

Paris to admiration, by dint of natural genius merely; turned cribbage boards and such small cabinet toys to perfection; took a hand at quadrille or bowls with equal facility; made punch better than any man of his degree in England; had the merriest quips and conceits, and was altogether as brimful of rogueries and inventions as you could desire."

John Lamb married the daughter of a Mrs. Field, who occupied the position of housekeeper at an old country mansion, and seven children were born, four of whom died; the survivors being John, a thoroughly selfish, free and easy, good natured man, who does not figure largely or with much credit to himself in the family history; Mary, the afflicted sister, to whom Charles devoted his life; and the subject of this paper.

Charles Lamb was born in the Inner Temple on February 10th, 1775. His childhood was passed amid the dry and dusty surroundings of a lawyer's sanctum. His young eyes were familiarised with parchment deeds and the dull brown leather covers of huge legal books, mammoth Blackstones and elephantine Cokes, portentous monsters, awful in the eyes of a child. Escaping from their uncongenial vicinity he was free to wander at will in the retired courtyards and secluded paths skirting the Temple Gardens; or, straying beyond these sacred but dingy precincts into the adjacent narrow and busy streets, gaze wistfully at the glittering contents of shop windows, or pause to examine with awakening interest the prints and pictures displayed upon some old bookstall; for Charles was never a child in the ordinary sense of the word, he was never really young, no youthful diversions attracted his infant tastes; a tiny city hermit, as old-fashioned as Paul Dombey, he shared in few or none of the amusements of children of his own age.

Then was laid the foundation of his passionate attachment to town life. He would have sympathised with Dr. Johnson and applauded his remark, "If you have seen one green field, you have seen all green fields, let us take a walk down Fleet Street." In a letter to Wordsworth, he says:—

I have passed all my days in London, until I have formed as many and intense local attachments as any of you mountaineers can have done with dead nature. The lighted shops of the Strand and Fleet Street, the innumerable trades, tradesmen, and customers, coaches, waggons, playhouses . . . the crowds, the very dirt and mud, the sun shining upon houses and pavements, the print shops, the old bookstalls, parsons cheapening books, coffee houses, steams of soups from kitchens, the pantomimes—London itself a pantomime and a masquerade—all these things work themselves into my mind, and feed me, without a power of satiating me . . . I often shed tears in the motley Strand from fulness of joy at so much life!

At the age of seven he obtained a presentation to Christ's Hospital, probably through the influence of his father's employer, Mr. Salt, and in one of his essays gives an amusing account of the famous Blue Coat School—the detestable food—"Monday's milk porritch, blue and tasteless." "The pease soup of Saturday coarse and choking." "The Wednesday's mess of millet." The "boiled beef on Thursdays with detestable marigolds floating in the pail to poison the broth." "Our scanty mutton scrags on Fridays—and rather more savoury but grudging portions of the same flesh rotten-roasted or rare on Tuesdays." Charles, however, escaped some of these gastronomical enormities owing to the kindness of an aunt. "I remember," says he, "the good old relative (in whom love forbade pride) squatting down upon some odd stone in a by-nook of the cloisters, disclosing the viands (of higher regale than those cates which the raven ministered to the

Tishbite), and the contending passions of L(amb) at the unfolding. There was love for the bringer, shame for the thing brought, and the manner of its bringing; sympathy for those who were too many to share in it: and at top of all, hunger (eldest, strongest of the passions!), predominant, breaking down the stony fences of shame and awkwardness and a troubling over-consciousness."

The upper master of the school at this time was the Reverend James Boyer, a good scholar and able school-master, but with too pronounced a faith in the efficacy of external stimulus for mental dulness, a faith he consistently shewed by his works, to the detriment of many a cuticle. "Nothing was more common," says Lamb, "than to see him make a headlong entry into the school-room from his inner recess or library, and with turbulent eye, singling out a lad, roar out 'Ods my life, sirrah' (his favourite adjuration) 'I have a great mind to whip you'—then with as sudden a retracting impulse fling back into his lair—and after a cooling lapse of some minutes (during which all but the culprit had totally forgotten the context), drive headlong out again, piecing out his imperfect sense, as if it had been some devil's litany, with the expletory yell, 'and I will, too.'"

In his fifteenth year straitened circumstances at home made it necessary for Lamb to leave Christ's Hospital and accept a clerkship; he spent three years at the South Sea House, and then transferred his services to the accountant's office of the East India company, where he remained until pensioned off a few years before his death. "Upon the shelves of that office," he used to say, "are preserved my real works in many folio volumes, the so-called works issued to the public being only the recreation of my leisure hours."

Nowhere, probably, outside of Utopia do the square pegs

find angular holes, and the round pegs circular ones. The world employs Robert Burns to guage ale barrels, and sends Charles Lamb to an accountant's desk where, as he said, "the wood entered into his soul." "The *opera omnia* of Lamb drawn up in a hideous battalion, at the cost of labour so enormous, would be known only to certain families of spiders in one generation, and of rats in the next. Such a labour of Sisyphus—the rolling up a ponderous stone to the summit of a hill only that it might roll back again by the gravitation of its own dulness—seems a bad employment for a man of genius in his meridian energies. And yet perhaps not. Perhaps the collective wisdom of Europe could not have devised for Lamb a more favourable condition of toil than this very India House clerkship."

For an event occurred a few years after he went to the India House which cast a baleful shadow across Lamb's life, and made it a lingering tragedy; he needed the steadying influence of a regular occupation, and its monotony of systematic application was perhaps a blessing in disguise. His father, suffering now from softening of the brain, had left his situation, and was living upon a pension in Little Queen Street, Holborn. His mother was ill and bedridden. There was an hereditary taint of insanity in the family. Charles himself had spent six weeks in a lunatic asylum in the early part of 1796. Amid all the family troubles, poverty, incurable sickness, mental aberration, Mary Lamb had borne the burden and heat of the day, like Martha, "encumbered with much serving." Incessant in devotion to bedridden mother and imbecile father, taking in work to add a slender pittance to the meagre income and eke out the scanty store, at length she succumbed to the terrible strain, the dreadful malady, that "leprous distilment in the blood," broke out in a

frightful homicidal form. Snatching up a knife in the ungovernable fury engendered by insanity, she stabbed her mother to death, Charles, too late, wresting the weapon from her grasp.

After the inquest, the poor creature was consigned to a lunatic asylum, but some time later, having recovered her reason, was given up to her brother at his urgent entreaty, upon the understanding that he should be answerable for her safe keeping. "This calamity of his fireside," says de Quincey, "followed soon after by the death of his father determined the future destiny of Lamb. Apprehending with the perfect grief of perfect love that his sister's fate was sealed for life—viewing her as his own greatest benefactress, which she really had been through her advantage by ten years of age—yielding with impassioned readiness to the depth of his fraternal affection what at anyrate he would have yielded to the sanctities of duty as interpreted by his own conscience, he resolved for ever to resign all thoughts of marriage with a young lady whom he loved—forever to abandon all ambitious prospects that might have tempted him into uncertainties, humbly to content himself with the certainties of his Indian clerkship, to dedicate himself for the future to the care of his desolate and prostrate sister, and to leave the rest to God."

This noble programme of self-denial Charles Lamb heroically carried out, he accepted his responsibility as a sacred duty, with unsurpassable brotherly love he consecrated his life to his sister's welfare, and his protecting care only ceased with death. "God love her," he said, his eyes filling with tears, "may we two never love each other less." Having taken his resolution, Lamb never shrunk from the consequences it entailed, or murmured at the cost of sacrifice, he bore the burden with a fortitude of the quiet, passive, martyr kind which makes no noise, which

wins no applause, which simply suffers and endures. Henceforth the two were marked creatures, exposed to all the venom of slanderous tongues, to all the ill-natured satire of foolish and ignoble minds. They were driven from place to place, from lodging to lodging, none caring to harbour the homicidal maniac and her strange guardian. Time after time, and with increasing frequency as life advanced, Mary relapsed into insanity. Again and again had she to be consigned to the sad shelter of a lunatic asylum, and every time she recovered, her brother was there to resume his tender guardianship. Just before one of her attacks they were met walking hand-in-hand towards the mad-house, both bathed in tears.

To keep his sister, Charles had to devise means of augmenting his income, his salary at the India House being insufficient at that period for their joint support. He worked at literature after office hours. In 1797, he produced, in conjunction with Coleridge and Charles Lloyd, a small volume of poems, and a year later published *A Tale of Rosamund Gray and Old Blind Margaret*. "What a lovely thing is *Rosamund Gray*" said Shelley. "How much knowledge of the sweetest and deepest part of our nature in it. When I think of such a mind as Lamb's, when I see how unnoticed remain things of such exquisite and complete perfection, what should I hope for myself if I had not higher objects in view than fame."

But, unfortunately, work of the best kind is seldom lucrative, and Lamb wanted something more tangible than a poet's applause, he wanted money to enable him to carry out the solemn vow and promise that he had made, and soon after we find him turning his humorous powers to account by supplying a newspaper with six jokes a day at the rate of sixpence a joke! Anything more truly melancholy it is difficult to conceive. They were witticisms

written in blood. Laughter and tears, proverbially nearly allied, were here in closest union. One of the finest spirits of the age, crushed by calamity, under pressure of poverty, engaged in titillating the risible muscles of his contemporaries for sixpence a titillation! We are reminded of the ghastly merriment at an Irish wake. There is something in the idea suggestive of the grin of a death's head. Lamb eventually found the task intolerable, he became ill and was compelled to abandon it. When free from the incubus, he wrote: "I have given up two guineas a week at the *Post*, and regained my health and spirits."

His next venture was a five act drama in blank verse, entitled *John Woodvil*. It was full of beauties, rare felicities of diction, and lovely poetical images, but lacked the qualities essential to dramatic success. The Reviewers descended upon it in all their war paint, they fought and spared not, the critics of the *Quarterly*, and other leading reviews in those days were like Prince Rupert's cavaliers, they charged wildly and blindly, dashing and slashing, cutting their way through the authors of the period with a reckless audacity amounting almost to the morally sublime. They dispensed praise or blame, usually the latter, with an impartiality and fine disregard for the real merits of a production in a manner that reminds us of nothing so much as the periodical distribution of brimstone-and-treacle at the educational establishment of Mr. Wackford Squeers. Frequently they selected the best and most original works of their time for critical assault, and if much attention had been paid to their decisions, English literature would have been deprived of some of its chief ornaments in verse and prose. Not content with accelerating the death of Keats, they would have slain, if they could, not a few of the masterpieces of Byron, Wordsworth, Coleridge, Lamb, Charlotte Brontë, and a host of others

whose names are among the glories of our literary annals, and although now a wiser spirit is working in the critical field, the old Canaanites are not quite extinct. We heard a few years ago how an amiable and keen-sighted successor of the Quarterly apostles described Robert Browning's *Bells and Pomegranates* with great brevity and impudence as "Rubbish."

Happily for himself and for us Lamb wisely ignored the judgment of the Reviewers, he anticipated Emerson's advice. "Shun the spawn of the press and the gossip of the hour." He persevered, but the effort was not an easy one. The shadow of a terrible crime darkened the past, the suspense of a constant apprehension embittered the present, and the future seemed to offer little but opportunity for the dreary exercise of patience.

Contented as I may, to bear me on
T' the not unpeaceful evening of a day
Made black by morning storms.

Those who met the oddly-constructed figure, lean and shrivelled, arrayed in threadbare rusty black, adorned with flying ribbons, a long body with attenuated legs, a large noble head of Jewish type, with curiously twinkling eyes, stammering and stuttering in speech, might feel inclined to smile at so singular a phenomenon, but those who knew the story of his brave devotion, knew what a patient tender heart was beating there under the rusty black, knew what a pure and gentle spirit dwelt in that angular insufficient frame, never smiled, but were more inclined to weep.

In 1807, he published his *Tales from Shakespeare*. These were the joint production of his sister and himself, and secured immediate success. Many people imagine that these tales are only suitable for the nursery, but this results from imperfect appreciation of the work achieved. For years Lamb had been an assiduous student of Eliza-

bethan literature, and was saturated with its spirit. It has been said that he was born two centuries after his proper time, that he was, indeed, the last of the Elizabethans. A writer in *Notes and Queries* observes: "Charles Lamb was a living anachronism, a seventeenth century man, mislaid and brought to life two hundred years too late. Never did author belong less to what was nominally his own time, he could neither sympathise with it nor comprehend it; his quaintness of style and antiquarianism of taste were no affectation. He belonged to the school of his contemporaries, but they were contemporaries that never met him in the streets, but were mostly to be found in Poet's Corner, or under gravestones of long ago."

Nowhere was Lamb more at home than among the great dramatists of the English Augustan age. With what delight, when "Betty had lit the candles," he would draw from its sacred nook some old folio of Marlowe, Ford, Greene, Massinger, Beaumont, Fletcher or Shakespeare, and con its precious pages! One of his most conspicuous services to English literature was the impulse he gave to the study of forgotten worthies whose works had lain too long unnoticed on the upper shelves of aristocratic libraries, and his *Specimens of English Dramatic Poets contemporary with Shakespeare*, paved the way for a renaissance of the Tudor and early Stuart poets. The *Tales from Shakespeare*, even if written for the young, have been read with profit and delight by "children of a larger growth." There is an "art that conceals art" in the transparent simplicity and lucidity of their pages, in the dexterous interweaving of Shakespeare's own words, in the felicity with which a character is sometimes painted in a single sentence, in the compression that gives the whole story of a play in briefest compass without destroying the proportion of its parts.

Another important service rendered to culture by Charles Lamb was the rescue of Hogarth from a condition of undeserved neglect. He published an essay on the genius of Hogarth, in which attention was directed to the power and vividness of delineation shewn by that great and original painter, and which materially assisted in establishing his fame. No edition of *Hogarth* is complete without Lamb's essay. He saw subtility and genius where others had found only coarseness and vulgarity, proving himself a real critic by discerning the true and the beautiful in work which less clear-sighted observers had found false and repulsive; while fully admitting the presence in these pictures, or some of them, of features that create aversion, he says, "But I contend that there is in most of them that sprinkling of the better nature, which, like holy water, chases away and disperses the contagion of the bad." "I was pleased with the reply of a gentleman who, being asked which book he esteemed most in his library, answered *Shakespeare*, being asked which he esteemed next best, replied *Hogarth*. His graphic representations are indeed books: they have the teeming, fruitful, suggestive meaning of *words*. Other pictures we look at—his prints we read."

The *Essay on Hogarth* and the notes that were published with the *Specimens of Dramatic Poets* would have ensured Lamb a niche in the Temple of Fame if he had done nothing else, but his reputation rests chiefly upon the *Essays of Elia*, which were contributed originally to the *London Magazine*, and first appeared in a collected form in 1823. De Quincey says: "The prose essays under the signature of Elia form the most delightful section amongst Lamb's works. They traverse a peculiar field of observation, sequestered from general interest, and they are composed in a spirit too delicate and unobtrusive to catch

the ear of the crowd clamouring for strong sensations. But this retiring delicacy itself, the pensiveness chequered by gleams of the fanciful, and the humour that is touched with cross-lights of pathos, together with the picturesque quaintness of the objects casually described, whether men, or things, or usages, and in the rear of all this, the constant recurrence to ancient recollections, and to decaying forms of household life, as things retiring before the tumult of new and revolutionary generations, these traits in combination communicate to the papers a grace and strength of originality which nothing in any literature approaches, whether for degree or kind of excellence, except the most felicitous papers of Addison."

Lamb was now of mature age, and the *Essays* consequently exhibit his power at its greatest development. He pours out in them all the curious erudition obtained in the course of a lifetime passed among books, many of them books of a rare description, seldom included in a bookseller's catalogue. "I love," said he, "out of the way humours and opinions, heads with some diverting twist in them, the oddities of authorship please me most." We learn without surprise of his "hanging for the thousandth time over some passage in old Burton." We can understand the pathetic regret with which he would point to a vacant space on his shelves whence some old favourite, Isaak Walton or the like, had been abstracted by a ruthless borrower. "The human species," he says, "according to the best theory I can form of it, is composed of two distinct races—the men who borrow, and the men who lend. To these two original diversities may be reduced all those imperfect classifications of Gothic and Celtic tribes, white men, black men, red men. All the dwellers upon earth, Parthian's and Medes and Elamites, flock hither and do naturally fall in with one or other of these primary

distinctions. . . . To me . . . whose treasures are rather cased in leather covers than iron coffers, there is a class of alienators more formidable than any that I have touched upon. I mean your borrowers of books, those mutilators of collections, spoilers of the symmetry of shelves, and creators of odd volumes." And he concludes with the sage advice: "Reader, if thou art blessed with a moderate collection be shy of showing it."

Lamb's books were his children, they awoke in him the paternal instinct which could find no other form of expression. We can easily credit the story of his kissing some old folio when he thought that no observer was near.

Readers who adorn or disfigure their volumes with marginal symbols find as much difficulty in dealing with Lamb as with Emerson, almost every sentence seems to deserve a distinguishing mark of recognition; the essays are a mosaic of gems. Who but Lamb would have described a wretched cripple, destitute of nether terminations, as "a grand fragment as good as an Elgin marble"; or, say, with reference to the little chimney sweepers of those days, "I have a kind of yearning towards these dim specks—poor blots—innocent blacknesses . . . clergy-imps, who from their little pulpits (the chimney pots) preach patience to the world?" Sometimes he would sketch a character in a sentence. There was "Solemn Hepworth from whose gravity Newton might have deduced the law of gravitation;" and a certain clerk "a votary of the desk, a notched and cropped scrivener—one that sucks his sustenance as certain sick people are said to do—through a quill." There was Mrs. Battle, whose serious occupation in life was a game at whist. "It was her business, her duty, the thing she came into the world to do—and she did it—she unbent her mind afterwards over a book." An elderly accountant at the South Sea House

“relieved his vacant hours” with music. “But at the desk Tipp was quite another sort of creature. Thence all ideas that were purely ornamental were banished. You could not speak of anything romantic without rebuke. Politics were excluded. A newspaper was thought too refined and abstracted. The whole duty of man consisted in writing off dividend warrants.” Another official “had the air and stoop of a nobleman. You would have taken him for one had you met him in one of the passages leading to Westminster Hall. By stoop, I mean that gentle bending of the body forwards, which in great men must be supposed to be the effect of an habitual condescending attention to the applications of their inferiors.” Quaint and curious himself, Lamb loved the “oddities” of real life as much as he did the “oddities” of authorship, people “with some diverting twist in them.”

Quips and cranks and wanton wiles,
Nods and becks and wreathed smiles.

“Miscellaneousness of subject and treatment,” says Canon Ainger, “is the first surprise and delight felt by the reader of Lamb.” His essays have all the variety and charm that belonged to well-written letters before the art of correspondence was lost, many of them, indeed, are amplifications of passages to be found in his letters, the personal element is prominent, they are full of allusions to persons, places and incidents connected with his own life, his friends and relatives are introduced under various disguises, he tells us about himself, his feelings, emotions and peculiarities. He writes :—

I have no ear.—Mistake me not, reader, nor imagine that I am by nature destitute of those exterior twin appendages, hanging ornaments, and (architecturally speaking) handsome volutes to the human capital . . . those ingenious labyrinthine inlets—those indispensable side intelligencers . . . but, organically, I am

incapable of a tune. I have been practising God save the King all my life, whistling and humming it over to myself in solitary corners, and am not yet arrived, they tell me, within many quavers of it, yet hath the loyalty of Elia never been impeached.

Describing a fit of indisposition, he says:—

If there be a regal solitude it is a sick bed. How the patient lords it there; what caprices he acts without control! how king-like he sways his pillow—tumbling and tossing, and shifting and lowering, and thumping and flattening and moulding it to the ever-varying requisitions of his throbbing temples. He changes *sides* oftener than a politician.

Reflecting upon the passage of time, he remarks:—

In proportion as the years both lessen and shorten, I set more count upon their periods, and would fain lay my ineffectual finger upon the spoke of the great wheel: I am not content to pass away as a weaver's shuttle. Those metaphors solace me not nor sweeten the unpalatable draught of mortality. . . . I am in love with this green earth; the face of town and country; the unspeakable rural solitudes, and the sweet security of streets. I would set up my tabernacle here; I am content to stand still at the age to which I am arrived; I, and my friends, to be no younger, no richer, no handsomer; I do not want to be weaned by age, or drop like mellow fruit as they say into the grave. . . . Can a ghost laugh or shake his gaunt sides when you are pleasant with him? . . . Some have wooed death: but out upon thee I say thou foul ugly phantom. . . . Every dead man must take upon himself to be lecturing me with his odious truism.—Such as he now is, I must shortly be. Not so shortly, friend, as perhaps thou imaginest. In the meantime I am alive, I move about, I am worth twenty of thee: know thy betters.

Perhaps the best known of the essays is “A Dissertation upon Roast Pig.”

He must be roasted. I am not ignorant that our ancestors ate them seethed or boiled—but what a sacrifice of the exterior tegument! There is no flavour comparable, I will contend, to that of the crisp, tawny, well-watched, not over-roasted *crackling*, as it is well called. The very teeth are invited to their share of the pleasure at this banquet in overcoming the coy brittle resistance—with the

adhesive oleaginous—O, call it not fat! but an indefinable sweetness growing up to it—the tender blossoming of fat—fat cropped in the bud—taken in the shoot—in the first innocence—the cream and quintessence of the child pig's yet pure food, the lean, no lean but a kind of animal manna. . . . See him in the dish, his second cradle, how meek he lieth! Would'st thou have had this innocent grow up to the grossness and indocility which too often accompany maturer swinehood? Ten to one he would have grown up a glutton, a sloven, an obstinate disagreeable animal—wallowing in all manner of filthy conversation—from these sins he is happily snatched away.

Ere sin could blight or sorrow fade
Death came with kindly care.

His memory is odoriferous; no clown curseth while his stomach half rejecteth the rank bacon; no coal-heaver bolteth him in reeking sausages; he hath a fair sepulchre in the grateful stomach of the judicious epicure; and for such a tomb might be content to die.

Charles Lamb has been described as a “rare instance of the combination of a keen critical faculty with a tenderness and bright humour which made it impossible for him to be cruel.” “His *Essays of Elia* are full of this bright humour, this tender criticism, a ripple of pleasant laughter runs through them, just broken here and there by a sob,” there is “a desperate brightness always quivering on the verge of tears,” they are not merely amusing sketches of life and character, there is a strong undercurrent of genuine humanity, playful badinage is mingled with pathos, the “attic salt” seasons wholesome material, gentle satire never degenerates into bitter sarcasm, there are no barbed and pointed shafts of ridicule, there is no chastising with scorpions, the merriment is always kindly, never scornful; they were not written to lash abuses or punish iniquity, there is nothing suggestive of Juvenal, nothing reminiscent of Voltaire.

The fame of Lamb as an essayist has eclipsed his reputation as a poet, and diverted attention from his merit

as a critic, he is known as the "Gentle Elia;" but it was to poetry and criticism that his youthful energies were devoted, and to poetry he returned in his old age. A few sonnets, included in Coleridge's earliest volume of poems, were the first-fruits of his genius, and almost the last book he published was a volume of album verses. "As a poet," says Mr. Bates, "Charles Lamb is once again original. He has produced but little it is true, but that little is perfect in its own way, and ensures for its author a niche all to himself in the temple of Parnassus. What more pathetic than his lines on his mother, first printed in the *Final Memorials*, his *Old Familiar Faces*, *The Three Friends*, and *The Sabbath Bells*? Then there is the fierce energy of the *Farewell to Tobacco*, and the *Gipsy's Malison* with its almost demoniacal force of expression. These are all pieces of perfect finish, and are marked by a wondrously refined artifice of rhyme, rhythm, phrase, and condensation of thought." If Lamb is a minor poet, it is for the same reason that Gray and Collins are minor poets, and that Amos and Micah are minor prophets, the qualifying adjective having reference to quantity rather than quality of production.

As a critic Lamb possessed what is more valuable than learning, wide reading or completeness of logical outfit. He was gifted with almost unerring instinct. Men like Coleridge and Southey sent him their manuscripts before publication to receive the advantage of preliminary criticism. He was an "accessory before the fact" as regards many a noble production that England will not "willingly let die." He was foremost among the select few who recognised the genius of Burns and of Wordsworth, while as yet their title to fame was generally ignored. It is to Lamb we are chiefly indebted for the revival of interest in writers of the sixteenth and seven-

teenth centuries, whose works had sunk into unmerited oblivion. He did a work not unlike that done in a different province by the Society for the Preservation of Ancient Buildings. He awakened an intelligent interest in the literary monuments of the past. He drank deeply from that "well of English undefiled" the poetry of Shakespeare and his contemporaries. His letters to literary friends often consist almost entirely of appreciations and criticisms in a field at that time seldom explored. To writers like Beaumont and Fletcher the ordinary reader of the day might have said "Shakespeare we know, and Bacon we know, but who are ye?" Lamb did more perhaps than anyone to dissipate this ignorance.

But in whatever Lamb wrote, whether poetry, essays, or criticism, it is the personality of the man himself that leaves the most lasting impression upon the mind, the author overshadows his work, our interest is greater in the speaker than in the speech. His poetry is more popular than his criticism because of the stronger subjective element; his essays are preferred to his poetry because in them his self-revelation is most complete, the revelation of a character amusing in its quaintness, admirable in its devotion.

St. Charles! for Thackeray called thee so;
Saint at whose name our fond hearts glow,
See now this age of tedious woe.

That snaps and snarls!

Thine was a life of tragic shade;
A life of care and sorrow made:
But nought could make thine heart afraid,

Gentle Saint Charles.

Encumbered dearly with old books,
Thou by the pleasant chimney nooks,
Didst laugh, with merry-meaning looks,
Thy griefs away.

We, bred on modern magazines,
Point out how much our sadness means,
And some new woe our wisdom gleams
Day by dull day.

Lamb was a great deal more than a wit, he was a humorist. Wit is a surface gleam. It lights up incongruity with a sudden flash. It is wisdom's distortion, wisdom inverted as it were. A sudden glimpse is seen of a truth in a ludicrous relation. It is the province of wit to detect false analogies, wrong representations. Wit is purely intellectual. But humour, although allied to wit, has a different basis. It belongs to the feelings. It is warm and sunny. Wit is cold and glittering, it sparkles like frost on the panes. Humour is kindly, wit often caustic. Humour is less brilliant, less keen, more human, tender, sympathetic. Wit may be superficial. Humour is often profound. One of the easiest ways of testing a man's moral and intellectual position is to ascertain what he considers witty or humorous. If nothing moves his risible muscles, he is a man to admire at a distance. As Schopenhauer sarcastically observed: "The Philistine is distinguished by a dull dry kind of gravity, akin to that of animals." We depart at once from the menagerie where they live. "Here comes a fool," said Lamb one day, "let us be grave."

Lamb was a prince of humourists, his essays are brimful of drollery, a veritable mine of good things, and his quaint fancy was not by any means confined to his literary productions. It made its appearance in season and out of season. Coleridge asked him one day if "he had ever heard him preach?" "I never heard you do anything else," said Lamb. Wordsworth discoursing on Shakespeare remarked that "He himself could have written *Hamlet* if the story of the Prince of Denmark had

been before him." "O, I say," said Lamb, "Here's Wordsworth says he could have written *Hamlet*, if *he'd had the mind*." A lady expressing great love for children said, "And how do you like babies, Mr. Lamb." "Boiled Ma'am," was the startling reply. At a dinner party, being offered some cheese in a rather advanced condition, he asked for a piece of string, "that he might lead it home." Once Barry Cornwall said something he thought rather brilliant, and was thus complimented, "Very well, my dear boy, very well; Ben Jonson has said worse things than that—and better." "Really, Mr. Lamb," said the head of his office, rebuking him for unpunctuality, "you come very late." "Yes," was the answer, "but consider how early I go." Leigh Hunt, rather bored with one of Coleridge's theological disquisitions, exclaimed, "What makes Coleridge talk in that way about heavenly grace and the holy church and that sort of thing?" "Ah," replied Lamb, "there is a great deal of fun in Coleridge."

In 1825, the year that the *Essays of Elia* were completed, Charles Lamb was superannuated, retiring upon a pension; he had never been considered a particularly efficient clerk, and was now delighted at the prospect of freedom.

I could scarce trust myself with myself. It was like passing out of Time into Eternity—for it is a sort of Eternity for a man to have all his time to himself. I am no longer clerk. . . . I am Retired Leisure. I am to be met with in trim gardens. I am already come to be known by my vacant face and careless gesture, perambulating at no fixed pace nor with any settled purpose. I walk about; not to and from. They tell me a certain *cum dignitate* air, that has been buried so long with my other good parts, has begun to shoot forth in my person. I grow into gentility perceptibly. When I take up a newspaper, it is to read the state of the opera, *opus operatum est*. I have done all that I came into this world to do, I have worked task-work, and have the rest of the day to myself.

But the "rest of the day," although free from uncongenial drudgery, was not exempt from unpleasant vicissitudes. Lamb was restless, and moved from place to place; his sister's malady grew worse, the attacks more frequent and of longer duration; the "old familiar faces" disappeared one by one; amid a host of acquaintances he grew more and more lonely; an adopted daughter married and left the home; the home itself was broken up; brother and sister went into lodgings, where the latter could have the constant care of an attendant; Charles was not sixty, but health was failing; during the last few years he wrote nothing except an occasional poem for the album of a friend.

Lamb had many friends, among them some of the most distinguished citizens in the Republic of Letters, Leigh Hunt, Southey, Wordsworth, Rogers, Hazlitt, Talfourd, but the dearest of all was Coleridge. For him he entertained an affection that bordered on veneration. For fifty years they lived in the closest intimacy, and "in death they were not divided." In July, 1834, Coleridge passed away, and Lamb never recovered the shock. "His great and dear spirit haunts me," he said, "never saw I his likeness, nor probably can the world see it again." "I seem to love the house he died at more passionately than when he lived." "What was his mansion is consecrated to me a chapel." The memory of his school-fellow and lifelong friend never forsook him. One day a gentleman asked him to write a few lines for his literary album. He wrote them. Their subject was Coleridge. They were the last he ever wrote. In December, 1834, five months after his friend, he died.

So passed away this bright and gentle spirit, whose life was illumined by genius, sanctified by affliction, leaving behind him a memory not likely soon to fade. Playful,

gentle, loving *Elia*, we need not go to Edmonton to gaze upon thy tomb, thou hast erected an enduring monument in our English affections, and thy remembrance is kept green in the hearts of men.

Lamb is not to be read at all seasons and under every variety of circumstance. We should not take him to read on the shingle of the sea shore. Some books may be read to the accompaniment of the monotonous plashing of the waves, for others we want a quiet afternoon in some rural spot, such as Gray describes in his *Elegy*, before the sun sets and all the land is dark. But *Elia* is a book for a winter's evening in a cosy room, when the curtains are drawn close, and only the distant hum of tired humanity wending its way homeward disturbs the stillness.

"To gain immortality," said Schopenhauer, "an author can only be a man who, over the wide earth, will seek his like in vain, and offer a palpable contrast with everyone else in virtue of his unmistakable distinction." Lamb largely satisfies this severe requirement, "over the wide earth" we "seek his like in vain;" he belongs to no particular school of thought; he had no literary ancestry; he left no disciples; he is representative only of himself. Like Montaigne, Sir Thomas Browne, George Wither, Laurence Sterne, he is a solitary figure standing alone, "a palpable contrast with everyone else in virtue of his unmistakable distinction." His place is not among the intellectual leaders of mankind whose influence is felt from century to century. His name will probably never be one to conjure with among the masses of the reading public, they will continue to purchase, for shelf decoration, works of a parentage more august, and give their real attention to the ephemeral produce of the bookstalls. He never was and never will be, in the wide sense of the term, a popular writer whose productions flood the market and are found

in every drawing-room. His "unmistakable distinction" saves him from the dubious compliment involved in universal recognition. But although his contribution to literature is not weighty enough to place him among the front-rank immortals, whom all know by name and a certain percentage read, its quality secured him the applause of the best contemporary judges, and has gained him a permanent niche in the temple of fame. "The world," said Walter Savage Landor, "will never see again two such delightful volumes as the *Essays of Elia*; no man living is capable of writing the worst twenty pages of them." "His memory," wrote Southey, "will retain its fragrance as long as the best spice that ever was expended upon one of the Pharaohs." "Save to the 'sour complexioned' and matter of fact," says his most distinguished biographer, Lamb is "one of the most dearly loved among English men of letters," and there is "every sign that this love is one which no changes, either of fashion or taste, will diminish."

Are not his footsteps followed by the eyes
Of all the good and wise,
Tho' the warm day is over, yet they seek
Upon the lofty peak.
Of his pure mind the roseate light that glows
O'er death's perennial snows.

THE ETHICS OF COMMON LIFE.

By JOHN LEE, B.A.

It is easy to build up a system of Ethics. That is to say, setting out from the central idea that there is an ought-to-do and a can-do, it is by no means difficult to theorise on their union. We may conceive, for example, that every unit is hedonistically inclined, that he or she acts for his or her own happiness, or on the other hand, that he or she acts partially for the good of the race, and partially for his or her own good. Again, we may regard the deliverance of common sense as absolute, as authoritative, and from that we may deduce a body corporate of morals with a main content that the duty thus assigned must be performed whatever may be the result either to the agent or to the agent's fellows.

Having thus set out, the construction of a method of ethics is not an insuperable task. Such a method may have codified declarations, and these codified declarations may contain positive elements, such, for example, as benevolence and justice, and wisdom and prudence. But when we have completed our task, the question before us is an obvious one. What is the bearing of a method of ethics upon practical life?

Here, I take it, the scientific treatment of ethics comes to an end. Our lives are essentially rapid and complex. The influences which affect us are manifold; the motives which inspire us are counter-agent and confusing; the results which lure us are conflicting and often illusory. Of what use is a method of ethics for a village grocer or a

city clerk, for after all, our lives, whatever sphere we may occupy, are in their essentials comparable to those of the village grocer and the city clerk? In other words, to what effect has the study of ethics been brought to influence the day-by-day lives of ourselves and those around us? Herein, I consider, lies a most interesting problem.

One answer is made at this point. There are those who say the only practical ethical system is religion. In reply to this assertion it may be asserted that religion, in any form whatsoever, only affects the minority of mankind, so that for the majority there is some other code of conduct. Ah, replies the religious, but religion affects a wider area than is at first apparent; an atheist has read the Bible at his mother's knee; he has become indirectly influenced by religious sanctions to which he himself denies assent. It may be rejoined to such a plea that if any man rejects religion, to the same extent that he rejects it, religion cannot be regarded as an ethical sanction to that man. Moreover, of church and chapel-going people—and they are probably the minority—what proportion is affected by the inner ethical sanction of the religion to which they openly adhere? It must be admitted that the proportion is probably very small. So that for the great bulk of our community religion does not supply the direct sanction, nor the direct authority of right and wrong.

Nor does legislation supply the deficiency. At once it must be admitted that a wide area of human conduct cannot possibly be affected by legislation. To many of us the complex statute law of the land has no practical existence. We do not think that in our conduct of family affairs, and in our relations to our fellows, we are governed by enactment. Of course the fact is we are not governed by enactment in the great bulk of our worldly affairs. Apart from the question of common law, there is a great residue

of action which is not touched by law at all. For example, it is recognised as our duty to be kindly, affectionate and courteous. What system of legislation could enforce this threefold duty? At best legislation can only act negatively by restraining infringements; it can only in rare instances enjoin duties.

But what are duties? By whom are they enjoined? What is the sanction, the reward of performance or the punishment of neglect? The minority may say duty is that which God tells me to perform, either by the mouth of a church, a Bible, or a conscience. The majority, however, while they might say with their lips that they had some such supernatural authority, only too manifestly live regardless of the existence of God, and only too manifestly perform multitudinous actions without reference either to God or authority. But, say some, there is conscience. And what, we ask, is conscience? Does conscience ever err? Common notions say it does, for we hear that conscience may be deadened; on the other hand, it may be quickened, so that the individual can control this authoritative guide.

In the search, therefore, for a method of ethics of common life we seem to be baffled at every point. Scientific ethics apparently is out of court, for we know that men do not, and cannot sit down in the cool hour, of which Bishop Butler spoke, and weigh up whether conflicting courses of action will bring more pleasure — as the hedonists would put it; or would obey the moral sense — as the intuitionists would speak; or would tend towards the attainment of a personal ideal — as Professor Green would say. Religious sanctions are clearly inoperative in the bulk of cases; legislative sanctions fall far short of offering a complete solution. What is left?

There is of course the conventional standard of right

and wrong. That many men act with a single eye to the opinion of their fellows there can be no manner of doubt, but does this offer anything approaching a method of ethics? At the very best conventional ethics but call upon us to evade—not wrong-doing, but discovery; they offer us no other standard, they have no other attractive force. Provided we escape publicity we have satisfied conventional standards. Moreover, as Prof. Sidgwick pointed out, there are often two conventional standards—the exoteric and the esoteric. In public the conventional standard ruthlessly condemns; in private, there is shrugging of shoulders, with a hint that “boys must be boys,” translated into the jargon which fits the particular occasion. Smoke-room ethics and leading-article ethics are very different standards indeed.

Now the man-in-the-street has been pretty evident of late. It has been said, on reasonably good authority, that he is as wise as the Cabinet Ministers. Suppose the man-in-the-street becomes suddenly imbued with a desire for high ethical action. He admits that hitherto he has worked for a living; he has read, and slept, and ate, and smoked for his own enjoyment; he has kept his wife and children in comfort, and showered due affection upon them. Yet he feels that his life has been motive-less; he has no ethical or moral purpose. He lets his wife go to church, and sends his children to Sunday school, that others may rob him of the sacred portion of his parental duty, for he does not bother about these things himself. He has jogged along quietly and comfortably. He has robbed no one, nor has he, by slander, taken away any good name; but still he knows there is no moral enthusiasm or virtue or spirit in his life. What does he propose to do?

Ah, he says, there is a science of conduct called “Ethics,” I will get at it and see if there I can learn

something of broad and full and free life apart from all this superstitious mediæval business which now-a-days they call religion. Science has advanced—for my friend Brown knows all the stars by name; my friend Smith is a hero in bacteriology; and Robinson can put social evolution into a formula. Surely the science of conduct has advanced also; surely I shall be able to get a formula of life? I will try.

Accordingly, our friend, the man-in-the-street, begins to read the Science of Ethics. He examines Plato and Aristotle, notwithstanding his scorn of mediævalism. Here he comes across formulæ, clear and definite enough, no doubt, but of what value? Plato tells him that virtue is the imitation of God; the effort of man to resemble the original; that it is comprised of four elements—wisdom, courage, temperance, and justice. Then he comes to Aristotle. Here he finds the great, good, and final end; the perfect life; the highest happiness of which we are capable. No, the man-in-the-street is but little wiser. He can see the theoretical force of such formulæ; he can appreciate their beauty, but where, he asks, does the applicability come in? He must toil for his daily bread; he must fight to keep the gnawing wolf from the door. To what extent, therefore, does a perfect life lure him, or to what extent is a *summum bonum* a fascination? There is no room in his narrow sphere for Epicureanism, since days follow days with monotonous sameness; there is no room for Stoicism, since worries and cares fret him and give him but little rest.

Accordingly, the man-in-the-street banishes the ancients to the neglected realm where he has already put religions. He appeals to the moderns therefore. He tries Kant. The great German philosopher bids him perform his duty merely for duty's sake, but that does not help,

since our friend wants to know what his duty really is. Nor is he aided when he meets the great categorical imperative, and finds that he should universalize his action—"Act in such a way as you would wish all men to be acting." It is grand, admits the man-in-the-street; it comes by far the nearest to a possible philosophy, but there are many circumstances in which he is placed which must be different at the moment from those surrounding other men. For example, he takes a homely instance. He needs a winter overcoat. If he denies himself of a winter coat he will catch cold, fall ill, perhaps lose his situation. Now he can obtain an overcoat on credit, and he has a fair prospect of being able to meet the account in due time. But if all men bought everything on credit it would be immeasurably bad for the world. Hence, in the simple instance of a winter's overcoat, he finds that Kant's great doctrine presents an insurmountable difficulty, and a dilemma. Probably he is measured for his coat the same day, and the imperative falls to the ground.

But Kant is not the only philosopher. There is Hegel. The man-in-the-street may at length succeed in unravelling the secret, and in understanding Hegel. But the result is that he is faced by paradoxes which appal him. He is, for example, to lay down his life that he may find it again. That is curiously akin to something he has read somewhere else, and he is prejudiced against it at the outset. What can he lay down? There are the wife and the bairns, the little home, the daily toil to keep that home together. Did Georg Frederic Hegel ever face that simple problem, he wonders. His employer bids him make a certain representation about an article of sale. Without knowing what his conscience is he feels uncomfortable about it. Ah, he must follow Hegel. He must lay down: what? His wife's happiness, the home, the comfort of an

assured if lowly income? No, the man-in-the-street is driven by forces which he cannot restrain, and so he does not follow Hegel.

Even more modern philosophers are equally unavailing. Of what value is Mill's *Utilitarianism* to him? How can he act for the happiness of the greatest possible number, when wife and bairns represent everybody of value to him? In Herbert Spencer he finds a lot of words, "definite coherent heterogeneity," and the like, which puzzle him and do not assist him to a conclusion. Sidgwick tells him that the one clear deliverance of conscience is that utilitarianism is the true sanction of human conduct. But he is not much nearer to a course of action in a life which is burdened of detail. Nor does he comprehend, in his own heart, that capacity for a sublimated life of which Green speaks so beautifully. He would be glad if he could assure himself that this higher self-satisfaction, this attainment of a higher personal ideal were his. Alas, he recognizes, honest man as he is, that one of the main and incontrovertible features of his character is that he is wofully imperfect, that wrong-doing is ever with him, that he tends to selfishness and ease, the while he would fain strive for a far different aim.

Out of all his study of ethical methods he is not much farther. Martineau bids him choose the higher of competing springs of action. This, at least, has the advantage that it fits in with the plain man's knowledge of his own heart. There are competing springs; the competing springs are higher and lower, but this he knows: that some differ not merely in degree, but in kind. In a word, there is right and there is wrong. What constitutes the difference? It is not merely that there is a more right and a less wrong; it is that good and bad, well-doing and ill-doing are divided by a great gulf. The plain man has not

arrived at this conclusion by logic, nor by study of ethics. He knows it somehow. An instinct has conveyed it to his mind, and more, to his soul.

We come here to the crux of the whole question. A rapid survey of methods of ethics shews us that, philosophically, right and wrong lose something, in their several treatments, of their differentiating characteristics. It is not merely that some action will bring a greater happiness to self or to others, and other action will bring a less; it is not that some action is motivated by loftier, and other by less lofty purpose; it is not that common sense or intuition delivers the preferential nature of this or that course of life. It is that there is a clear and unmistakable line of demarcation between right and wrong; the man-in-the-street knows this, even when he acts immorally. He does not try to justify his wrong-doing by logical methods; his normal attitude is that there is some ground to justify a departure from the ordinary standards of action, and that he will remain an exception, a special case, which tests the rule, but by which the rule does not fall.

In the examination of these notions, difficulties, of course, arise. There is the difficulty mentioned by Mr. Lecky. A Mahomedan has a clear and definite notion of right and wrong as regards the use of intoxicating liquor. He considers the use of alcohol to be a most heinous sin. In respect to purity he is less rigid, whereas the position is exactly reversed as regards Western civilization, where the moral sentiment in respect to purity is rigid, and in respect to the use of alcohol is vague and indeterminate. It is right therefore to ask, if the doctrine of moral sentiment is universally applicable, why so great a difference should be manifested. The explanation is not difficult to adduce. Evidently the true moral sentiment on the subject is that strict moderation is the deliverance of

conscience or intuition, but the circumstances of Eastern civilization throw emphasis upon the abuse of alcohol, whereas the circumstances of Western civilization throw emphasis upon purity. Climatic reasons act in the same direction, so that the Eastern conscience, to use the readiest word, is deadened in respect to purity, and the Western conscience is deadened in respect to the use of alcohol. The growth of the sentiment of temperance in regard to alcoholic liquors in Western civilization is a curious proof of the position I have taken up, in that it shows that intrinsically there is no real difference in the moral sentiment of the two civilizations; it is only in the application of the moral sentiment to the circumstances of the time that the difference arises. A learned English philosopher has shewn that even in the most barbarous times, and amongst the most barbarous nations, there are moral sentiments of right and wrong which coincide in their main essentials with the conceptions hitherto considered as peculiar to Christian civilization.

However it may have arisen, therefore, it seems to be indisputable that there is a keen moral sense in all men. Moreover, this moral sense, though it may evince slight aberrations in respect to its application at various times, yet evinces still more striking agreements and similarities. To say this is not to undermine a rational egoism, whether the egoist seeks his own happiness or his own self-development, nor does it undermine a legitimate utilitarianism for the good of the species, whether that good be for the perfection or for the mere happiness of the race. Intuitionism, therefore, in this sense, is not incompatible with the great ethical systems at which we arrive by rational processes.

For it is no part of my task to undervalue the utility of speculative morals. At least speculative morals have

this advantage, that they bring rational processes to bear upon dogmatic morals; they check undue dogmatism, and they define the sphere in which dogmatic morals are legitimate. It has been shown, I think, that utilitarianism as an aim, including true egoism as an aim, is not incompatible with the intuitionism which I have defined. It is the work of the speculative moralists to decide and to define the ultimate aim. Where each of us sets out empirically, and with but a narrow range of vision and a narrower range of knowledge, the speculative moralist will bring the wider range of vision of his study of all human nature, and the wider range of knowledge which that vision has afforded him. It is part of my aim to strive to find out what effect speculative morals, obtained by the "light of pure reason," can have on practical work-a-day life, to what extent our old friend, the man-in-the-street, is affected by this speculative reasoning. At this point, therefore, I come back to the original question, what method of ethics, what guide to every-day conduct, has the ordinary citizen?

Briefly, I would reply, the intuitionist, and none other. As so stated it may seem to be old-fashioned, and I do not opine that even so it would on that ground be objectionable. But whilst I say that it is intuitionist, I consider that it is intuitionist with its intuitions lit up and vitalized by high ideals, among them the ideal of the utilitarian, the ideal of the true egoist, and the ideal of the transcendental philosopher who believes that each of us has an individual nature to develop, and a potential self to realise.

But, it will be asked, if I seriously say that ethical methods are impracticable for the man-in-the-street, can I equally seriously say, with any hope for consistency, that this compound of many methods is the science of conduct

adopted by untrained and unthinking minds? I think I can.

Imagine for a moment a utilitarian at the street corner. He preaches to those who pass him by. "O, my friends, we are all selfish and self-seeking. Let us lay aside all our past narrowness. Let us in future act in every detail of our lives that the greatest good may be for the greatest number, and that everyone shall count for one, and no one for more than one." Would that fire a crowd with moral enthusiasm, even though the charmers were Bentham and Mill themselves? Apparently not. Imagine, on the other hand, that the utilitarian preachers held forth—as many who would repudiate the name of utilitarian are at this moment holding forth—that we must watch carefully lest we give offence "to one of these little ones," that our consciences—our intuitions—must be as quick to the injury of others as to the injury of ourselves; that we are all members of one body. That is a doctrine which not only would appeal, but one which has appealed time and time again since the multitudes of men-in-the-street, the common people, "heard" Someone "gladly." Or again, suppose an egoist, say a follower of Hobbes, took to street preaching. He tells his audience that even benevolence is selfish, and must be selfish; he warns them against all selfish acts; he builds up a moral theory upon desire for personal "good" or benefit. Even the man-in-the-street would revolt against such a doctrine, unaccustomed as he is to high flights of altruism. Yet an egoism is popularly taught. It has crept into the proverbs of the day; we assure our children by the means of copy-book headings, not that honesty is dogmatically right, but that it is the best policy. Butler has proved in his sermons that self-interest is quite a legitimate lure to the performance of moral action, but he places the main deliverance in the

dogmatic dictate of intuition, the self-interest follows respectfully after.

To sum up, therefore, a long and tedious argument, we have arrived at an acceptance of moral sentiments. They are clear and definite in our minds; they are more or less clear in all minds; they are capable of development and even of training, and it is the work of the speculative philosophers to develop, to classify, and to emphasize the moral sentiments. The man-of-the-world, untrained in ethical speculation, will have his clear and definite moral sentiments; he will differ from the philosopher, not in the essentials of the moral sense, but in the ultimate aim to which the moral sense applies itself. From day to day the impress of dogmatism will be on his mind, but for the philosopher the whole tendency of human action will be laid bare.

This is, as I consider, the difference between the sceptical and the constructive aspects of ethics. The sceptic will try to place utilitarian, or perhaps egoistic, sanctions in the stead of intuition. Moral sentiments he will deride; great distinctions of right and wrong are to him only degrees of expediency. But when expediency is shewn to be correlative to right and wrong; when the ultimate good of ethical systems is shewn to be realisable by the day-to-day fulfilment of intuitionist deliverances, we are coming near to an objective body of morals; we are coming very near to practical ethics.

For, after all, it is this question of objective morals which is the stumbling-block. If there is only expediency, if morals only mean the good of me or them, or "everybody counting for one, and none for more than one," it is evident that, once blot out the human race, and right and wrong cease to be. Subjective ethics are very dangerous. There is the destructive element, the element of difference

between individual and individual. Whether a man believes in the existence of God or not, he is clear in his own mind that he has a duty *ad externam*. "Could Robinson Crusoe do wrong?" is an old question. At least, this is fairly certain that Crusoe had periods of moral depression, had a sense of "reigning in this solitary place," and if reigning does not connote the performance of right and wrong, nothing does. It does not require any dogmatism as to the nature or attributes of God to help us to lay down quite categorically that a large sphere of moral action does not concern our relations towards other human beings. Similarly, our duty to ourselves is but a small section of our duty. Hence it follows that outside us, independent of our existence, there is right and there is wrong, an objective ethic. It may seem that I have shewn that mere reason cannot give us a moral doctrine only to prove afterwards that, by way of intuition, reason succeeds in performing the impossible. If this were so, I admit the argument is vicious. But my contention is that reason—apart from moral intuitions—is insufficient to establish moral doctrine; and that reason, co-operating with moral intuition is all-sufficient, not merely to establish moral doctrine, but to point and to rationalize its ultimate aims and its inalienable results.

What follows from the acceptance of an objective right and wrong, subjectively cognizable, but independent of the mere existence of the subject? At once follows the existence of a Subject to whom right and wrong is cognizable independent of our existence. It is Berkeley's argument for the existence of God stated in ethics, rather than in metaphysics as Berkeley states it. Things only exist, he says, in relation to a sentient mind; things in themselves exist in relation to the sentient mind of God. As regards moral sentiments, therefore, since they are not

mere fleeting phantoms in the minds of individuals, but moral apperceptions of objective morals, these will exist when the mortal minds are no more: they will exist in the mind of God.

And our old friend, the man-in-the-street, bears eloquent testimony to the argument. He may cast away religious influences from him, but none the less he has his perceptions of right and wrong—perceptions clear and unmistakable—only mistakable indeed when wrong chooses for its purpose the chameleon nature. Not from legislation, or convention, or from expediency, did he gain his moral intuitions; though legislation and convention and expediency may and do have their due effects upon them. He has obtained them, though perhaps he does not admit it, by the broken light of reflection from the greater light of eternal moral truth.

THE THEORY OF DETERMINISM IN ITS RELATION TO HUMAN NATURE.

BY REV. CANON S. C. ARMOUR, D.D.

A GREAT step in the progress of human thought has been the recognition of the close inter-dependence of the various departments of nature. This doctrine has been especially brought home to us in this age of physical research. Departments of knowledge which were formerly regarded as distinct are found to be very definitely related, mutually illuminative, and commonly subordinate to a great system of scientific truth.

And our progress in this research has likewise deepened our conviction of the universality of law. Science has revealed to us "an infinite number of invariable sequences" brought about by the operation of definite forces; and it has been found that though we traverse immeasurable space and countless ages of time, we shall find the same forces producing the same phenomena. "The progress of science," says Professor Huxley, "has meant the extension of the province of what we call matter and causation, and the concomitant gradual banishment from all regions of human thought of what we call spirit and spontaneity."

In this general research man has had his due share of attention. Former theories about him have been scrutinised in the light of new discovery. Especially has the Doctrine of Evolution led to some important modifications of the old views about his nature and constitution—views which, however at variance, had yet one common ground

of agreement, in regarding man as something isolated from other forms of sentient life.

Evolution, however, has now taken away the boundaries which fenced him off; and man, as represented by modern theories, now appears no longer as a being apart, but as the last and highest term in an infinite series of development. His faculties, corporeal, mental and moral, are now regarded as but higher and more complex developments of the rudimentary types found in the lower animals. To judge of him fairly he must be considered in his relation to the anterior organisms from which he was evolved, and to the modifying conditions which have continuously moulded, and are still moulding his life.

Now this scientific observation of human nature in relation to its origin and environment, has revealed more and more the reign of law in the events of human life. Here we see the potency of inherited tendencies, combined with the external influences to which man is subject. We find wide areas of life exhibiting a general uniformity of sequence, similar antecedent combinations producing similar results. Statistics, social, industrial, criminal, sanitary, show more and more that man in the mass is to a large extent the creature of circumstances, and that given a certain set of known antecedent conditions, a nearly uniform average of results may be expected to follow.

Now this general correspondence of human actions to inherited tendencies and environing conditions has encouraged a certain class of thinkers to seek to interpret all the experiences of human life in terms of natural laws, whose operations we can observe, and whose results we can predict, with unerring accuracy. Let us only ascertain pre-existent or present conditions and environments, and the riddle of every life can be read. Each action, good or

evil, can be scientifically accounted for, as a process in the alchemy of life, by which antecedent conditions re-appear, as it were, in new form, transmuted into their consequent moral equivalents.

Though I am well aware that I must be treading on ground very familiar to the members of this learned society, yet it may not be an evening entirely wasted if we examine this Determinist Theory of Positivism, and inquire whether it adequately accounts for the whole of human experience, or whether its advocates have not come to a too hasty conclusion in assuming that the same laws of unvarying sequence which their researches have discovered in external nature really govern all the phenomena of life, and whether in their equation of human nature, they have not omitted one or more of its essential factors.

Is man simply a product? or is he in part an originating cause? Is he merely the passive creature of the cosmic forces which contributed to form him, and which are still at work in the scene around, and the constitution within him? Or does an inner self stand in the midst of these forces, master of a reserve of power which he can bring to bear, ere things have drifted irretrievably beyond him? This, I think, is a question which must be considered before we can judge of the merits of the case between the determinists, and the advocates of human freedom.

I venture therefore to select a passage from Professor Bain's work on *The Emotions and the Will*, as a fair representative of the views of a large section of Positive Philosophers. The passage I quote from him is a very significant one, containing in fact the very *cruz* of the position.

In the setting up of a determining power under the name of "self" as a contrast to the whole region of motives generated in the

manner described, I see only an erroneous conception of the facts. The proper meaning of self can be nothing more than my corporeal existence, coupled with my sensations, thoughts, emotions, and volitions—supposing the classification exhaustive, and the sum of these in the past, present and future. Everything in the nature of a moving power belonging to this totality is a part of self. . . . No one can vouch for an inscrutable entity in the depths of one's being, to which the name *I* is to be distinctively applied.”—*3rd edition*, p. 492.

This passage, I say, fairly represents the Positive view of Determinism. We see that Bain, in his estimate of the contents of man's nature, distinctly refuses a place to an *ego*, a self, transcending his corporeal existence, his sensations, thoughts, emotions, and volitions. These, taken together, he says, constitute self, and there is nothing besides. Man is simply “a synthesis of sensations.” I selected this passage because it contains as continuous and explicit a statement as I can find of the doctrine of determinism in its relation to human personality. Careful readers of the author will indeed find many things in his work inconsistent with this rigid exclusiveness, and to some of these I shall advert. I would merely remark in passing that such lapses into inconsistency are far from uncommon in the writings of many positivists on this subject. Nature is too strong for them. They expel her with the fork of artificial theory: still she comes back. The *ego* slips in unawares, and their arguments are based implicitly on the very thing which they are brought forward explicitly to disprove.

But let us look more closely at the terms of Bain's analysis. In the first place there is no provision made in this theory for continuity of consciousness. Self is merely body, sensations, thoughts, emotions, volitions. It is plain, therefore, that as these are constantly changing, man's identity does not survive from moment to moment.

Sensations, volitions, emotions in themselves are fleeting phantasms. Now it is absolutely impossible to explain continuity of consciousness, or memory, except on the supposition of a subject which continues on after the transitory states have gone, and which is one and indivisible, while they are multiple and complex. The materialist theory of past impressions on the brain will not serve, because these do not provide for any unifying principle which recognises these as its own.

And again, it is curious to see how Bain throws in his own eyes the dust of false analogy. He speaks here of sensations, thoughts, emotions, etc., as if they were something entirely abstract. He compares them to the qualities of a piece of quartz—hardness, transparency, etc. But sensation, volition,—every one of these terms has so to speak a dual significance. Besides denoting a function, they imply a sentient subject which exercises it. Sensation and volition cannot exist by themselves. Suppose, for sake of example, that there could be an impression of sound in one part of the brain, and an impression of light in another. These two impressions, in order to belong to a single experience, imply a unifying principle. To say that there exist, or did exist, an impression of sound and an impression of light, is not the same thing as saying that you or I have, or had, two corresponding sensations in our consciousness. Even if sensations and thoughts, as such, could arise in the brain without an *ego*, they could not possibly, without an *ego*, form parts of the same experience.

Again, it is very remarkable that in this summing up of the contents of personality, Bain entirely omits any mention of consciousness. No doubt for the maintenance of his system it was necessary to do so, because it would be impossible to formally recognise consciousness as a

factor in man's mental constitution, without recognising a conscious something. Not that he omits it altogether from his book, for his last chapter is given to it, but, it would seem, rather as an after-thought in a post-script than as an essential part of his system. He records a series of definitions of consciousness given by other writers, and finally gives his own, viz. :

The word consciousness is identical with mental life, and its various energies, as distinguished from the mere vegetable functions, and the conditions of sleep, torpor, insensibility, etc. (p. 545).

But this will not account for the consciousness of self, which, be it a phantasy, yet haunts us persistently. Self, says Bain, = body + sensations, thoughts, emotions, volitions in the past, present, and future. But how, according to his analysis can there be any past, present, and future? Granting that there is mental life (*i.e.*, consciousness as he says) implied in each successive sensation or thought; how, if you deny the existence of a permanent subject—the basis of these fleeting mental phenomena—how can you co-ordinate them into an individual experience? “Granting for a moment,” says Dr. Momerie, “that feelings could be conscious of themselves, yet the knowledge of one another is not implied in this. It might as well be argued that a number of pearls could form a chain without something to bind them together, as that a number of self-conscious states could form a self-conscious series without some principle of continuity running through and connecting them.” This failure of the materialist school to account for this self-consciousness which is part of every human experience, is very clearly and honestly stated by John Stuart Mill. “If,” he says, “we speak of the mind as a series of feelings, we are obliged to complete the statement by calling it a series of feelings which is aware of itself as past and future: and

we are reduced to the alternative of believing that the mind or *ego* is something different from any feelings . . . or of accepting the paradox that something which, *ex-hypothesi*, is but a series of feelings can be aware of itself as a series." Even at the risk of being tedious, I cannot help quoting another short and familiar passage from Herbert Spencer, which displays with acute discernment the self-contradiction of the materialist philosophy on this subject.

How can consciousness be wholly resolved into impressions and ideas, when an impression of necessity implies something impressed? Or again, how can the sceptic who has decomposed his consciousness into impressions and ideas explain the fact that he considers them as his impressions and ideas? Or, once more, if, as he must, he admits that he has an impression of his personal existence, what warrant can he show for rejecting this impression as unreal while he accepts all his other impressions as real? Unless he can give satisfactory answers to these queries, which he cannot, he must abandon his conclusions; and must admit the reality of the individual mind.—*First Principles*, 5th ed., p. 64.

Thus then, although Bain, as he says, "cannot light on anything of the sort," I venture to submit that the existence of a metaphysical *ego* is presupposed as a necessary condition throughout the whole of our sentient experience. In the earlier portion of his work he admits that knowledge involves remembrance and apprehension of semblances and contrasts. But these mental states are perfectly inconceivable, except on the supposition of a permanent *ego* present to the different phenomena remembered and contrasted. It is sensation, as materialists maintain, which forms the raw material of all knowledge. But in order to explain the existence of a single sensation, we must postulate the existence of an *ego* which remains permanent while the particular feelings which it apprehends are continually changing and passing away.

Thus we come to the further question: assuming the existence of a permanent *ego*, am I a free agent or not? Are my volitions made for me, as Prof. Bain here teaches? When I will something, am I merely conscious in so doing that certain volitions have occurred? or do I know that *I* have formed them?

Now according to Bain's account of the Will (p. 303) there are two fundamental component elements in it. The first is "a spontaneous tendency" to movement: the second is "the link between a present action and a present feeling, whereby the one comes under the control of the other." "We suppose," he says (p. 315), "movements spontaneously begun and accidentally causing pleasure. . . . A few repetitions of the fortuitous concurrence of pleasure and a certain movement will lead to the forging of an acquired connexion . . . so that after a time the pleasure, or its idea, shall evoke the proper movement at once." That is to say, volition is simply the link between a desire for a certain object, and the movement employed to get it. This is all delightfully simple: yet it hardly meets the whole case. What of the being who desires the object, and who has an idea of the means which he must employ to get it? Prof. Bain in the neatness of his analysis is fond of using such terms as idea, desire, pleasure as purely abstract, and, as I pointed out before, loses sight of the fact that such things cannot exist apart from a conscious subject. The real mystery of volition lies in the being who has the desire. The physiologist, no doubt, can point to an operation which takes place in the brain. He may say there is a molecular motion in one part of my brain corresponding to the desire, and another in another part corresponding to the means to gratify it. But he cannot explain the connexion between these motions and the sensation in a conscious subject.

Still the question remains, are we the passive recipients of these movements which register themselves in our brain? Are we merely witnesses to a sequence of movement upon desire, volition coming in as a *nexus* between the two? Let us again refer to our author. "I believe," he says (p. 483), "that to demand that our volitions shall be stated as either free or not free is to mystify and embroil the real case, and to super-add factitious difficulties to a problem not in its own nature insoluble. Under a certain motive, as hunger, I act in a certain way, taking the food that is before me, going where I shall be fed, or performing some other preliminary conditions. The sequence is simple and clear when so expressed: bring in the idea of freedom, and there is instantly a chaos, an imbroglio, a jumble." Again (p. 484), he says, "If any one asks whether the course of volition in a man or an animal is a case of despotism or a case of freedom, I answer that the terms have no application whatsoever to the subject. The question put into someone's mouth by Carlyle 'Is virtue then a gas?' is not too ridiculous a parody on the foregoing." That is to say man is simply a machine, a passive subject to the play of forces. And if this is a true account of him, so that "as between the different motives of his mind there is no meaning in liberty of choice," (p. 487), we may admit that freedom and despotism are not applicable terms. This is Determinism, pure and simple.

I have referred already to the curious lapses of consistency of which philosophers of this school may continually be convicted. For example, compare this foregoing passage with another. "Deliberation," he says (pp. 408-409), "is a voluntary act, under a concurrence or complication of motive forces. . . . During the moments of abeyance or suspended action the current of

the thought brings forward some new motive to throw its weight into one scale, whence arises a preponderance. From our own experience, we come to see that it is dangerous to carry into effect the result of the first combat of opposing forces; and this apprehension of evil consequences is a stimulant of the will. It is one of the properties of a well-trained intellect to make at once a decisive estimate of the amount of time and thought to be allowed for the influx of considerations on both sides of the case, and at the end of such reasonable time and thought to give way to the side that appears the stronger."

No doubt we are all agreed on the very reasonable and edifying character of this passage, in which, by the way, the *ego* has slipped in unobserved. But not to dwell on that, I would leave it to philosophers of Bain's way of thinking to harmonise these two passages, to reconcile the determinism of the first with the freedom of the second. The first would represent man as merely a passive percipient in the drama of his own life, and his actions, like the resultants of mechanical forces, as the inevitable effects of pre-operative conditions. The second, apparently innocent of any sense of inconsistency, endows him with the power of balancing opposing considerations, of withholding present action as long as he pleases, and finally of giving way, or not, to the side which appears to him the stronger. Such inconsistencies will always crop up in artificial systems of thought which would represent man—who is something superior to nature, since he is nature's interpreter—as nothing more than one of her products, albeit the most complex.

Indeed, this theory of Determinism seems to carry its own condemnation in the revolt of human consciousness against it. Consciousness, since it is the immediate knowledge which the mind itself has of its own operations, is,

after all, the only certain informant to which the Positivist can apply for the facts of mental life. Now if there be any persistent, ineradicable factors in human consciousness they are (i) the sense of our own existence, the sense that I exist as the basis of all my feelings, thoughts, and volitions; and (ii) that I am free to act in accordance with the motives which are pressing upon me, or to act in direct opposition to them, or to abstain from acting at all. But apparently the method of many of the Positivists in dealing with the nature of man's mind has been first to make their theory, and then select their facts. The prospect of framing a philosophy which shall bring everything in the universe under the same laws of invariable sequence was too attractive to be resisted: and so they have jumped to the hasty conclusion that these laws must govern the whole realm of mind as well as of external nature; though in their jump they have lost sight of these two persistent facts in consciousness. As Mr. Sidgwick says, the most overwhelming cumulative proof in favour of Determinism "seems more than balanced by a single argument on the other side, the immediate affirmation of consciousness in the moment of deliberate volition. It is impossible for me to think at such a moment that my volition is completely determined by my formed character and the motives acting upon it. The opposite conviction is so strong as to be absolutely unshaken by the evidence brought against it." On what intelligible theory, I would ask, other than that of my freedom can Determinists account for the fact that at this moment, as I stand here, I have the power to direct my mind whither I will; that at my absolute choice I can make it range over a host of the most incongruous ideas, touching on each lightly, or dwelling on it persistently, dismissing it finally, or reverting to it, as I please. I can at this moment call up an event in my childhood, or a line

of poetry, or an incident in the South African war, or the formula for the square of $(a + b)$, and a thousand such ideas, simply at my absolute will. What explanation can they give why I should take the war incident third, instead of first or second? And in the face of this power, what justification have these philosophers for representing my consciousness of freedom as an illusion? This is not reverie, in which trains of ideas present themselves by mere association. The brain, it is true, may follow a certain involuntary course of action, and may thus suggest to the mind a train of ideas: and this succession of ideas, while the will is passive, might conceivably be accounted for by a theory of Determinism. But we know, too, that the will has the power to control the cerebral action. "We can interrupt a chain of thought, and start another, and out of a variety of thoughts we can reject those which are most pressing."

A good deal of obscurity has been brought into the question before us by the use of the word "motive." Many of the Positivists are too fond of taking it literally, as though motives acted on man in the same way as force does on matter. Of course, if this use were allowed to them, the theory of Determinism would be the more easily defended. But the word "motive" can only be admitted as a metaphor in questions of mental phenomena. "There is no such analogy," says Dr. Momerie, "as the word motive suggests between the movement of a machine and the action of an *ego*; between the force of the current which is carrying the swimmer away, and the desire which urges him towards the bank. If a number of forces act on a machine, it must inevitably yield to their resultant. But when a number of motives bear upon an *ego*, he need not yield to any of them. He can pause and reflect. He can call up other motives." Even when the whirlwind of

temptation is sweeping him away, and moral landmarks are for the moment forgotten, yet by a mighty effort he can right himself, and assert his mastery over the "motives" that a moment before seemed so irresistible.

The difference between physical and psychical motives is well illustrated by Professor Green in his *Prolegomena to Ethics*. He points out that when Esau sells his birth-right for a mess of pottage, it was not, strictly speaking, his hunger which was his motive. His animal wants conditioned his motive. But the motive itself was his own idea of himself as finding his chief good in the satisfaction of the animal want. If it were not so, he would not have regarded himself as responsible for his action. And this was the true reason of his subsequent remorse. Here is another fact in mental experience for which Determinism fails to account. It is to no purpose that Spinoza tries to explain away remorse as an illusion of the imagination. We are not deceived. We feel, after each lapse from right, that we might have chosen the better part. Even if there was nothing more to be said, there is strong ground for presumption that remorse is not due to mental illusion, in the fact that this sensibility is most poignant in the pure and noble, and is least keen in the grossly ignorant and degraded. As Dr. Martineau finely says, "It is not the most guilty who know most of guilt."

To sum up, then, the common sense of mankind will always revolt against a system of philosophy as narrow and artificial which, while undertaking to explain all phenomena by its neatly-cut theories, yet ignores the facts which every sane man's consciousness reveals. Already the reaction against Positivism is vigorous and decided, and our ablest thinkers admit that no system which ignores the metaphysical, can ever account in all its

fulness for the physical, least of all, for the nature of man. As Prof. Ferrier has well said of the system of philosophy of which we have been speaking, "Philosophers have pondered over man's nature; and what, after all, have they made of it? What sort of a picture have they presented for our imagination? Not the picture of a man, but of an automaton, that is, what it cannot help being; a phantom, dreaming what it cannot but dream; an engine, performing what it must perform; an incarnate reverie; a weathercock, shifting helplessly in the winds of sensibility; an association machine, through which ideas pass linked together by laws over which the machine has no control; anything, in fact, but that free and self-sustained centre of underived activity which we call man."

ÆLFRED THE GREAT, KING OF ENGLAND
1000 YEARS AGO.

By WILLIAM WORTLEY.

THAT eminent ethical writer, philosopher and historian, whose force of character and peculiarly forcible expression of thought led him to inculcate with insistency the doctrine that might is right—energy—will force and work rule the world. That the idle, the weak, the froward, must be disciplined—ruled and governed by the strong and wise in thought and action; and in his *Past and Present* Carlyle shows us what a poor, low-born friar did in lifting up the lazy, self-indulgent, useless monks of that day, and, as their abbot, leading them on to a useful life, full of virtue, purity and goodness.

In *Frederick the Great*, this doctrine is further exemplified in the life and work of that hero. Surely Thomas Carlyle was a descendant of some old Wicking; he had such sturdy faith in the old Teutons, defines the German as the guerre-man—fighting-man—the man “wha gars,” as our brither Scots say.

Leaders men must have, but right men as leaders; men of might and high morality. A king he defines as Könung—König—a Kenning, or Canning man—a man who *can* think and do right.

And then, in his fantastically graphic *French Revolution*, Carlyle shows the awful effects on a whole nation of the selfish, finicking, dilettante rule, or rather misrule, of a supercilious aristocracy and priesthood, and the terrible reaction with its horridly cruel and barbaric anarchy;

when in their frenzy, a whole people, long down-trodden, so that their moral nature was utterly crushed out, swept away the costly paraphernalia of an empty state, a heartless religion and a merciless justice. However, his hero, who was one of England's great men, yet *more Scotiorum*, Carlyle claims him for his own country, as they claim our Shakespeare, Milton, Newton and many more, (other brother Britons also, make similar claims on dear old England). Cromwell fought against unrighteousness in king and priest with might, and we owe a debt of gratitude to Carlyle for writing (as well as to his dear old mother for urging her son to write) the *Life and Letters of Oliver Cromwell*; in which that noble man is shown in the clear light of his true character. Cromwell was a great leader, and men are ever in want of such great leaders—kings of men—full of energy, and wisdom to rule and guide their fellows—aye, and when men feel they have such a one as their leader they submit themselves to his rule and guidance in perfect trust, and will follow him to death itself, if need be. Such leaders of daring and doing—men of character—full of self-abnegation and fellow-feeling, doing as they would be done by—have ever been silently present among us, and without such great and brave souls—God's gifts to humanity—society would quickly fail in its efforts to raise itself to higher social, moral and spiritual ideals. Such men are called heroes, and such a man was Ælfred, King of England, 1000 years ago, that Ælfred, whom men in glowing admiration have named "the Great," "the truth teller," and "England's darling"! The warrior, the hunter, the lawmaker, the singer, the deliverer and the lover of his people—but more, he was called "lord of the harp and liberating spear," "the creator of our first navy"—and, above all, he was the father of English literature.

Egbert, the grandfather of Ælfred, being banished by Brihtric, of Wessex, sought refuge with Charlemagne, and went with him to Rome, where he was made Emperor of the West. Egbert succeeded Brihtric in 800 A.D. He warred most successfully with the Britons while the other Saxons fell into ruin through ceaseless dissensions. At length, in 819, he began a formal course of conquest which in eight years made him sole monarch. In 827, the title of "Bretwalda" was revived, and Egbert is seen by a charter granted in 828 to have used the title of "King of the English," though more usually he termed himself "King of Wessex."

Ælfred was born in 849, at Wantage, in Berks: the youngest son of Æthelred and Osburg, and grandson of Egbert. In his fourth year the boy was sent with an embassy to Rome, then the centre of the world of thought and law. Leo IV, the pope, ordained and anointed him as king, and received him as his adopted son. Two years after he thither accompanied his father, who loved him more than his other sons, and he stayed in the city until he was seven years old.

His residence twice at Rome, with its noble architecture and ancient monuments, then comparatively perfect, the vastness of the city, its law, its story, its early Christian life, its spiritual power; even the temporal power which flowed from it into Charles-the-Great, of whom Alfred had heard so much, must have made a deep impression for the inspiration and education of such a boy, and their remembrance must have excited in Ælfred's mind that eagerness for knowledge which, in after life, so usefully distinguished him. In his eighth year, on his return from Rome, he stayed some time in the Frankish court of Charles-the-Bald, during his father's courtship and marriage of Judith,

who was granddaughter of Charles the Great, and that great emperor's memory and power still, after 50 years, shed a departing gleam over the dying empire. Doubtless the learned men of the court would tell him of the English scholar Alcuin, who had brought to Charles the treasures of learning from York. His own people had done this great work, Alfred never forgot it. He recalled it years after in one of his prefaces. From his eighth to his twelfth year his biography is uncertain, some chronicles intimate that infirm health caused him to be sent to Modwenna, a religious lady in Ireland, renowned as a saint and miraculous healer, in accordance with the superstition of the times. But though Ælfred's excited capability and eagerness for knowledge abounded, he had received no regular education from masters and books, which is singular, as his father, some say, had been trained as a priest under Swithin, at Winchester. No doubt, as Ælfred had been a favourite, and of delicate health, indulgence, even to ignorance, as usual, had been his lot. Happily he was not spoilt withal, and his mind first showed its activity by his love of the simple but stately and heroic Anglo-Saxon poetry. By day and night he listened wherever it was recited, stored his memory with it, and at last became a versifier himself. But there was a dearth of intellect, few would learn to read, and Ælfred, a prince, son of an educated father, who had twice visited Rome and lived in Paris after Charles-the-Great had improved the people, passed into youth without the simple tuition which the poorest child has now the opportunity to acquire and is urged to attain. This he at last got from his step-mother—Judith. When Ælfred was twelve years old she was sitting one day amongst the children with a manuscript book of Saxon poetry in her hands,—a volume, no doubt, beautifully illuminated and

bound, and of great rareness and value in those times. She was able to read it, for the Franks had received from the Saxons a taste for poetry and literature which they were diligently pursuing and enjoying. "Whoever of you first learns the songs," said the queen, "shall have the book"; and Ælfred had no rest until he had won the prize. The love of his native literature never left him, and even in after life, one of his chief pleasures was to recite English songs, to collect Saxon poems and teach them to his children, to get his nobles to care for them and have them taught in schools. He knew the old Sagas and the heroic names. He mentions Weland the mighty smith; he told Asser the story of Eadburgh, a legend of Offa of the ancient Englalund; and he recorded with touches of personal interest the story of Cædmon, the first poet of England. However, the Anglo-Saxon language was not the repository of literature. The learned Bede, Alcuin, and others, had written their useful works in Latin, and in the language of Rome rested all the facts of history, the elegance of poetry, and the disquisitions of philosophy. His great regret, which he uttered with deep sighs, was that, when he had youth and leisure, and might have learned, he could find no teachers. No masters capable of initiating him in Latin, in which the great minds he afterwards studied had conversed and written, were then to be found in all Wessex.

Ælfred excelled other men in personal comeliness and strength; as a hunter he was unrivalled, and was praised for his great skill in the chase. His love of knowledge made him neither effeminate nor slothful; his whole life was one of great warlike exertion, and the exercise of hunting may have been both salutary and needful, and was proof of his eager activity; the more so as he was afflicted with a disease which would have sanctioned

indolence in one less alert. His malady seems to have been an unusual kind of slow fever, with symptoms that made some call it the *ficus* or hæmorrhoids. He suffered from infancy of this debilitating disease, and as he approached manhood "he had recourse," says Asser, "to a church in Cornwall, where St. Gueryr rested, and where St. Neot, a relative, then was, and in prayerful faith he was relieved;" but another affliction followed which haunted him with agony, yet, nothing could suppress his unwearied genius.

Surrounded with troubles which would have shipwrecked any other man, his energetic spirit changed them into active aids to advance him to virtue and to fame. He was religious from his childhood, and used to frequent sacred places to offer up prayer and to give alms. Imagine, then, at the age of eighteen, how bitter was his sorrow when he heard there was not one religious house from the Tyne to the Humber which was not ravaged and burnt by the heathen; and not one trace, saving perhaps in York, and in a few Abbeys north of the Tyne, was left of the learning and libraries of Northumberland. Still more bitter would be his sorrow in 869, when the rich abbeys of East Anglia were destroyed by the pirates Ivar and Hubba, sons of Ragnar Ludbrok; and Wessex, his own land, lay open to the ravager. Gorm or Guthrun led this new attack, and the long gathered wrath of the patriot and lover of learning whetted Ælfred's sword, when, on the height of Ashdown, around the stunted thorn, he and his brother Æthelred made their final charge, and beat the brutal invaders down the hill with a pitiless slaughter.

In the battles which followed, Æthelred was wounded to death, and in 871, when 22 years old, Ælfred became King. During his brother's reign he had born the royal title of *Secundarius*. In his nineteenth year he married

Ealswitha, daughter of Ethelred the muckle, a Mercian nobleman, and alderman of the Gainas (in Lincolnshire). The earnestness with which, in his *Boëthius*, he dwells on conjugal affection, shows this union was a source of supreme happiness.

The Wicking, Ragnar Lodbrok, disturbed the peace of many a region of Europe, but Ella, of Northumberland overcame him and made him prisoner. Ella, in barbarous resentment, doomed this brave, bold brute to perish in lingering pain by the stings of venomous snakes in a dungeon. "His *Quida*, or death song," says Shāron Turner, "has been venerated and celebrated for its genius and antiquity." Some say it was his own, some say his wife's, who was a famous scald or poetess. It is one of the most ancient poems of the north; expresses exactly the manners of the times, and, compared with other histories and traditions that have been preserved about him, it will be found to contain the most simple, probable, and consistent incidents. As his death—the approach of which it intimates—was the cause of that disastrous invasion which shook Ælfred from his throne, it merits attention. The *Quida* sings of Ragnar's onslaughts on various countries from the north, the Baltic, to Flanders and England; it gives a view of one of the most dreadful states of society in which our species have ever lived. He gloats over the imagery of death and human slaughter, and compares the pleasures of war to social festivity, and the destruction of youthful happiness he extols as rivaling the sweetest hours of life. "Was it not like the hour when my bright bride I seated by me on the couch?" What must have been the characters of such people? In the bold invasion of England he boasts of the death of the Anglo-Saxon Walthiofr.

We hewed with our swords—
 Hundreds sprawling lay
 Round the horses of the Isle-rocks,
 At the English promontory;
 We sailed to the battle
 Six days before the hosts fell;
 We chanted the mass of the spears
 With the uprising sun;
 Destiny was with our swords,
 Walthiofr fell in the tumult.

Battles in Perth and the Orkneys are sung; at the Hebrides; in Ireland; at the Isle of Skye and the Bay of Ila on the Scotch coast are triumphantly sung; and then the Isle of Anglesey. After two stanzas of eulogy on battles, he begins to sing of his disastrous change of fortune:

It seems to me from experience
 That we follow the decrees of fate;
 Few escape the dooms of the natal goddesses.
 Never did I believe that from Ella
 The end of my life would come,
 When I stream'd the blood in slaughter,
 And urged my planks o'er the lakes;
 Hugely feasted we beasts of prey
 Along the bays of Scotland.

He cheers his spirit as the adders sting with the remembrance of his children, anticipating their fierce revenge for his sufferings.

Here would for me all the sons of Aslauga
 The bright brands of Hilda awake,
 If they knew but the danger of our encounter,
 What a number of snakes
 Full of venom strike me!
 I gained a true mother for my children,
 That they might have brave hearts.

He grows weak as he sings; he feels coming death, yet feels a gleam of pleasure in the hope of vengeance which his children shall inflict.

It flows to mine inheritance;
 Grim dangers surround me from adders,
 The vipers dwell in the hall of my heart—
 We hope that soon will the staff
 Of Vitris stand in Ella's breast.
 My sons must swell in rage
 That their father has thus been conquered,
 Must not the valiant youths
 Forsake their repose for revenge?

Recalling his own exploits gives a momentary impulse of new vigour, and the number shows the ferocious activity of his sea-king life:

Fifty and one times have I
 Call'd the people to the appointed battles
 By the warning-spear messenger.
 Little believe I, that of men
 There will be any
 King, more famous than ourself.
 When young I grasped and reddened my spear.
 The Æsir must invite us,
 I will die without a groan!

As the fatal moment nears, he rouses himself to expire with those marks of exultation which it was the boast of this fierce race to exhibit.

We desire this end
 The Disir goddesses bear me home
 As from the hall of him joying in spoils,
 From Odin, sent to me.
 Glad shall I with the Asæ
 Drink ale in my lofty seat.
 The hours of my life glide away
 But laughing I will die!

The hero that arose with ability equal to meet and change the crisis which these new habits of the Scandinavians were bringing on Europe, was Ælfred-the-Great, grandson of Egbert.

A month after Ælfred's accession, the Danes attacked his troops at Wilton, in his absence, with such superiority of force that all the valour of patriotism could not prevent a defeat. This was the ninth battle fought this year in Wessex beside Ælfred's, and several of his ealdormen's and theigns' excursions without number. Wearied himself, and the country exhausted, Ælfred made peace with his enemies, and they quitted his dominions. Peace with such people was a dangerous truce, and the rest of England was in their power. They came to London, threatened Mercia; Burghed twice negotiated with them, then disgracefully quitted his throne and went to Rome, where he soon died. They destroyed the monastery at Repton and Croyland Abbey, imposing on the latter a tax of £1,000.

When the Danish power declined, Ælfred associated Mercia with Wessex, to which it ever after remained attached. How must all this terrible fighting and bloodshed have palled on the aspiring soul of the thoughtful king? He became heartsick and out of patience with his fate; he longed for peace; he longed for a fellow-feeling with him in his higher aims, his higher aspirations. No wonder he became impatient with these brutal contentious surroundings; impatient with his ignorant nobles and fellows; no wonder he gave vent to hasty and impatient judgments, and grew out of sympathy with all about him under such hopelessly depressing scenes.

"The intellectual disparity between himself and his people," says Shāron Turner, "was indeed great, and when men begin to acquire knowledge above the level generally attained by their contemporaries, they sometimes increase insensibly a haughty self-opinion and craving fondness for their favourite pursuits, with an irritable impatience of every interruption. This hurtful temper, which

disappears as the judgment matures, may have grown up in Ælfred on his first eager acquisition of knowledge; and such feelings could only be exasperated when the duties of his office called him from his studies and meditations into a world of barbarians, who despised books and bookmen, with whom his mind could have no point of contact, whose ignorance provoked his contempt, and whose habits, perhaps, excited his abhorrence. Beginning to meditate, in his private hours, on the illustrious ancients whom he had heard of, his mind aspired to be assimilated to theirs, and could only loathe the rude, martial, and ignorant savages who filled his court, claimed his time, and oppressed his kingdom. Dependent and noble were alike fierce, uninstructed and gross." "How could his emerging mind compare the exalted characters and depicted civilization of Greece and Rome, or the sweet virtues inculcated by Christianity, without an indignation, impatience and misanthropy which call for our compassion rather than our reproach?" "How could he have imbibed an ardent intellectual taste with an increasing love of the great, the beautiful, and the good, without being affected by the melancholy contrast between his studies and experience? Everyone who has struggled into knowledge and refinement amidst the impediments of uncongenial connections and occupations, will have felt in his own experience something of that temper of mind which, in circumstances somewhat analogous, seems at first to have actuated Ælfred." In the early years of his reign, amid his struggles and cares, his ardent desire for right between man and man forced the young king at times into impatience with the conduct of even peers and others in authority. No wonder he fell into disfavour with his nobles and representatives, for, whenever they failed in judgment or duty, they were treated with such strict im-

partiality, that it is said Ælfred caused even his judges to be hung as malefactors who had condemned poor men to death unjustly or against the verdict of their jurors!

Asser, the pious bishop and faithful friend, says, "the Lord suffered him to be very often wearied by his enemies, afflicted by adversity, and to be depressed by the contempt of his people." "Wherefore," he adds, "he fell often into such misery, and despondently withdrew himself so that none of his subjects knew where he was or what had befallen him."

Asser had already declared that on the invasion of Gorm or Godrun many had fled into exile, and that "for the greatest part, all the inhabitants of that region submitted to his dominion." Some say Ælfred had offended his people, some say their flight or disaffection produced his. "Ælfred, however, was greatest when all seemed lost," says Stopford Brooke.

He refuged himself at Athelney (the Æthlings or nobles' isle), a hill defended by the Parret and the Tone, with morass and forest between, among the deep-watered marshes of Somersetshire. It is here that legend places the scene of the cowherd's hut, and Ælfred's watching and forgetting the burning loaves; and it is here that the famous jewel of gold and enamel was found, with the inscription, "Ælfred bade me to be wrought." There he sat for three, perhaps seven months, gathering host, and broke forth from his solitude in the spring of 878, attacked the Danish army at Ethadun, drove them to their camp, forced their surrender in a fortnight, and dragged from them the peace of Wedmore. That peace, in spite of the later struggle and that with Hastings between 886 and 896, settled England. It broke the advance of the Danes, and weakened their power in England and abroad. It left Wessex and Kent in Ælfred's hands; it secured him that

part of Mercia west of Watling Street—from the Ribble to the Severn Valley—and to the upper valley of the Thames. The rest of England, from the Tees to the Thames, including London (which Alfred, however, got in 886), was in the hands of the Danes.

Over the Danelaw—as it was called—Danish customs, religion and commerce prevailed; the Danish sagas were sung, and the Danish spirit grew. One would think that these folk, especially when they became Christians, would have left some traces of their keen individuality on the poetry or prose of the Danelaw. The stories of Horn and Havelok, rooted in Danish and Keltic traditions, a few legends in Layamon's poems, this is all, excepting place-names and folk-tales, to show us that more than half, and, in after years, the whole of England belonged to Danish kings and to Danish folk. But the Danes who took England were scarcely a nation; when they settled down they became part of the English people and absorbed their ways; they were of the same race and tongue as the men they conquered. Christianity also knit them to the English, who made them Christians. With the loss of their wild gods, half their individuality fled away. When Ælfred was forced to leave the Danelaw in Danish hands, he little thought that he was making Englishmen. The Danes and English then were two, not one, and Ælfred had to keep the English elements uppermost. When Ælfred had thus made peace for his people, he wished to educate them. But there were more needful things first; and he spent the six years of quiet, from 878 to 884, in repairing ruins made by the Danes; in reforming the army and in building a navy—he was the first to give us a navy—and in establishing just law and government.

The peace was broken in 885 by a fresh attack of the Northmen, but again secured the following year. Ælfred

was now complete master, not only of his kingdom, but also of the national imagination. "In that year," says the *Chronicle*, "all Angle-kyn turned to Ælfred except those in bondage to Danish men." In the following year he began with his mingled humility, good sense and self-confidence, that revival of learning which he had long desired. The foundation for his great purpose had already been partly laid. He had collected around him a number of scholars who should be first his teachers, and afterwards enable him to teach the English people in the English language what they ought to know as citizens of a great country, and as pilgrims to a heavenly country. He called to this work, Werfrith, Bishop of Worcester, who himself presided over the school in that town; Denwulf, of Winchester, the husband of the wife who scolded Ælfred for burning the cakes; he had capacity, and Ælfred advised him to learn, promoted him, and at length made him bishop; and the Mercian Phlegmund he made Archbishop of Canterbury; two Mercian priests, Æthelstan and Werwulf, who were his chaplains and teachers (all three children of Worcester College), and these exhausted all that England could do for him. He then turned to foreign lands for help. "Men once came," he said, "from out-land countries to seek instruction in England; now if we need it, we can only get it abroad." So he called Grimbold from Flanders, and put him over the new Abbey rising at Winchester; and John, the old Saxon from the monastery at Corvëi, in Westphalia, to preside over the religious house his gratitude had dedicated to God at Athelney.

His incessant spirit kept these men to their work. He translated Gregory's *Pastoral Care* to teach the clergy their duties; he urged the bishops to give their leisure to literature, and urged it as a religious duty. He gave them

books to translate, and insisted on their being finished ; so also he urged the judges to learn their duties and the laws of England.

His difficulties with the clergy were great ; they were greater with the nobles. The English warriors and courtiers were sorely troubled when compelled to read and write ; or, if they could not learn, to hire a freeman or slave to recite before them the books needful for their duties. When, at last, he despaired of the elder men, he sent all the young nobility, and many others not noble, into the schools where his own children were taught, so that they might learn to read both English and Latin books, and to translate one language into the other. But this was afterwards. His first business was his own education, and Æthelstan and Werwulf, his daily tutors, were not enough for him. So he asked Asser, of St. David's, in the farthest border of Wales, to live and study with him. Asser saw the King at Dene, near Chichester, early in 884, and he stayed three days with him. "Stay with me always," said the King, and when Asser pleaded his love for Wales and his duties there, the King replied, "Stay with me at least six months in the year." Asser suffered of a fever for more than a year, but in July, 886, he came to Leonaford, and stayed eight months at court. He probably then went slowly back to Wales, and returned to Ælfred in the middle of 887. From that time he seems to have spent six months every year with the King. Then Ælfred's close study began. "I translated and read to him," writes Asser, "whatever books he wished, for it was his custom, day and night, amid the afflictions of mind and body, to read books or have them read to him." Thus he learned Latin, and the first result of this association with Asser was Ælfred's *Handbook*. This *Handbook* was his first work, and he was 45 years old when he began it. It

consisted of Bible extracts, excerpts from the Fathers, and of scattered illustrations. "Collected knowledge of Divine testimonies," "flowerets of many kinds from the Holy Scriptures," is afterwards said of this manual. This *Handbook* began in 887, and is fully set forth in English in 888 for the use of the people; unfortunately it is lost. His next effort was the *Law-book*. He compiled it out of the existing codes of Kent, Wessex, and Mercia, *i.e.*, out of the laws of Æthelbert, Ine, and Offa.

It had an introduction and three parts:—(1) Ælfred's Laws; (2) Ine's Laws; (3) Ælfred's and Guthrun's Peace; and it was composed, said William of Malmesbury, "*inter fremitus armorum et stridores lituorum*"—amongst the clash of arms and the blaring of trumpets. This suggests the collection was being made in 885 or 886. By this time he had made a tolerable acquaintance with Latin, and as the most necessary class to benefit were the clergy—the teachers of the people—he chose first to translate the *Cura Pastoralis*—the Herdsman's Book—of Gregory the Great, a kind of manual of the clergy's duties. It was probably finished in 889, and sent to the bishops in 890. "It is," says Stopford Brooke, "the book of a beginner. In it, however, English literary prose may be said to have made its first step; the fountain of that great stream of England's incomparable prose literature quietly burst forth in these hours of patient, yet more than royal labour." The preface is the first piece of any import we possess of English prose. It is redolent of Ælfred's character and spirit. It marks the state of English literature at the time it was written. It makes us realise how great was the work Ælfred did for literature, and the difficulties with which he had to contend.

The second book Ælfred translated (890–91) was Bæda's *Ecclesiastical History of the English*, and this was

addressed not only to the clergy but also to the laity, "who ought to know the history of their own land." He takes pains, as if it were of national interest, to give in full the story of the origin of English poetry. In 891 he began to work the *Chronicle* up into a national history. The new book Ælfred now took in hand, probably in 891-3, was *The History of the World*, by Orosius, a book originally written in 418 at the suggestion of Augustine, to prove that the wars of the world and decay of the Roman Empire were not due, as the heathen declared, to Christianity.

This was the work of about five years, 888 to 893, years of "stillness" that Ælfred loved, years when he nourished the arts of peace and literature, as he had done in wars and government; that "desire I have to leave to men who should live after me a memory of good deeds." He collected poetry — Northumbrian poetry — Bæda's account of Cædmon would have set him to it. "I should," says Stopford Brooke, "like to have seen Ælfred reading *Beowulf* for the first time, or Asser and Ælfred reading together the *Christ of Cynewulf*." This was not all; he sang and listened to English song, but cared also for men and things beyond England. He kept open house for all who brought outlandish tales; he received pagan Danes, Britons from Wales, Scots, Armoricans, voyagers from Gaul, Germany, Rome, and messengers from Jerusalem and the far East, and we learn that he sent messengers to visit the Christian churches of India! Christian churches of India! Does not this seem like the foreshadowing of a great and then far-distant future? A foreshadowing of the reunion and commingling of the earliest and latest branches of the Aryan or noble races of humanity? The great Ælfred, full of earnest endeavour for the good of his fellow-men, often wearied out with mental and bodily

suffering, yet spares no pains in the strife with brutality and ignorance; and, in his sorrow, is full of sympathy and love that reach out to the ends of the earth. This seed of love which he sowed in the long-distant past, has it not now grown into a mighty union of nations? India, under her sufferings, loyal to her younger sister—younger at least in civilization and culture—but in her thousand years of vigorous life still old enough to be the little mother of many nations. These children of the East and children of the West, long before the dawn of dated history, had one common origin. Their language still contains words of similar sounds and meaning, showing they are of one family; and many hundreds of years before Ælfred, had not India a cultured literature, with poetry and science, aye, even long before the glorious outburst of Greek art, literature, and philosophy?

Pardon this digression.

Ælfred neglected not the arts, he developed the art of shipbuilding. He had architects from the continent, was himself an architect. He re-built fortresses; re-built London. He made and repaired roads; built with fair stone royal country-houses. In his reign, enamel work, gold-weaving, and gold-smithery flourished; and certain mechanical inventions were his amusement. Through all this lighter work he pursued the heavier of ruling his kingdom and preparing for wars.

These were his happiest days, but he lived, as he said, "with a naked sword always hanging over his head by a single thread," and his quiet was destroyed when the sword fell in 893. "Hardship and sorrow a king would wish to be without, but it is not a king's doom," the sorrow came with the pirates from Boulogne, with 250 vessels; they seized on the forest of Andred; and Hastings, with 80 vessels, passed up the Thames. In 894, Hastings got into

Hampshire, and the whole of the Danelaw soon rose and joined the invaders. It was their dying effort. Ælfred was well prepared, and the war, though carried to Chester and the North, and to Exeter and the South, was victoriously finished by the capture of the Danish fleet in 897. From that date till his death Ælfred had peace.

The book he now undertook was Boëthius' *De Consolatione Philosophiæ*. He had now become an expert in translation, and boldly entered into the soul of the author. Boëthius wrote it in prison where Theodoric, king of the East Goths, had thrown him on a charge of conspiracy. Composed as a comfort in his trouble, it is a dialogue between himself and philosophy, who consoles him for his evil fortune by showing that the only lasting happiness is in the soul. Inward virtue is all, everything else is indifferent. The book is the last effort of heathen philosophy, and so near to a part of Christianity that it may be called the bridge between dying paganism and living Christianity. Many in the middle ages believed Boëthius to be a Christian, and his work was translated into most of the European languages.

We will give a few excerpts from Wise's translation of Ælfred's works in connection with his version by Boëthius.

On Wisdom.—Wisdom is the highest virtue, and he hath in him four other virtues. One is prudence; another moderation; the third is courage; the fourth is righteousness. Wisdom maketh those that love it wise, and worthy, and constant, and patient, and righteous, and with every good habit fitteth him that loveth it. They cannot do this who have the power of this world; nor can they give any virtue from their wealth to those who love them, if they have it not in their nature. From this it is very evident that the powerful in this world's wealth have no appropriate virtue in it; but their wealth comes to them from without, and they can have nothing from without which is their own.

On Glory.—Oh glory of the world! Why do foolish men, with a

false voice call thee glory? Thou art not so; far more men have much pomp, much glory, and much worship from the opinion of foolish people than they have from their own works.

On Friends.—True friends!—I say then, that this is the most precious of all the riches of the world. They are not even to be reckoned among the goods of the world, but divine ones, because false fortune can neither bring them nor take them away.

Greed.—Dost mean to be covetous for money? Now thou mayest nohow else get it except thou steal it, or find it hidden, or there increase thyself with it where thou lessen it to others.

Ambition.—Would'st thou now be foremost in dignities? But if thou wilt have them, thou must flatter very miserably and very humbly those that may assist thee to them. If thou wilt make thyself better and worthier than many, then shalt thou let thyself be worse than some. How! is this not then some part of unhappiness that a man so brave should cringe to those that can give it? Desirest thou power? But thou shalt never obtain it free from sorrows from foreign nations, and yet more from thine own men and kindred. Yearnest thou for glory? But thou canst never have it without vexations; for thou wilt always have something contrary and unpleasing.

Lust.—Dost wish to enjoy thy desires unrestrained? But thou wilt despise God's commandments, and thy wearied flesh will rule thee and not thou it. How can a man become more wretched than by being subject to his wearying flesh and not to his reasoning soul?

His thoughts on God are entirely his own.

We should with all our power seek after God that we may know Him. Though it should not be our lot to know what He is, yet we should, from the dignity of the understanding which He has given us, try to find out. Every creature discovers that God is eternal! Then, said I, "What is Eternity?" Thou hast asked me a great and difficult thing to comprehend. If thou wilt understand it thou must first have the eyes of thy mind clean and lucid. I may not conceal from thee what I know of this: Know thou that there are three things in this world; one is temporary; to this there is both a beginning and an end; and I know not any creature that is temporary, but hath his beginning and his end. Another thing is eternal which hath a beginning, but hath no end; I know not when it began, but I know that it will never end; such are angels and the souls of men. The third thing is eternal without end, as without beginning:

this is God! Between these three there is very great discrimination. If we were to investigate all this subject, we should come late to the end of this book, or never.

But one thing thou must first know of this—Why is God called the highest Eternity? Because we know very little of that which was before us, except by memory and by asking; and yet we know less of that which will be after us. That alone exists rationally to us which is present, but to Him all is present—which was before, which now is, that which after us will be—all of it is present to Him! His riches increase not, nor do they diminish ever. He never remembers anything, because He never forgets ought. He seeks nothing, nor enquires, because He knows it all. He searches for nothing, because He loses nothing; He pursues no creature, because none can fly from Him; He dreads nothing, because He knows no one more powerful than Himself, nor even like Him. He is always giving, and never wants. He is always Almighty, because He is always good and never evil. To Him there is no need of anything. He is always seeing; He never sleeps; He is always mild and kind; He will always be eternal. Hence there never was a time that He was not, nor ever will be. He is always free. He is not necessitated to do any work. From divine power He is everywhere present. His greatness no man can measure. He is not to be conceived bodily but spiritually, so as now wisdom is and reason. But He is wisdom, He is reason itself.

One can scarcely believe that we are perusing the written thoughts of an Anglo-Saxon of the ninth century, who could not even read till he was twelve years old!

With this hasty view of King Ælfred's literary and other works, I would conclude this essay with the eulogium on Ælfred in J. R. Green's *Conquest of England*.

Hardly four years in fact had passed since the triumphs over Hastings when the "stillness" he had sighed for came to him. Ælfred died on the 28th October, 901 (some give 900). "So long as I have lived," he wrote, as life was closing on him, "I have striven to live worthily." It is this height and singleness of purpose, this concentration of every faculty on the noblest aim, that lifts Ælfred out of the narrow bounds of Wessex; for if the sphere of his action seems too small to justify a comparison of him with the few whom

the world owns as its greatest men, he rises to their level in the moral grandeur of his life. And it is this that still hallows his memory among Englishmen. He stands, indeed, in the forefront of his race, for he is the noblest, as he is the most complete embodiment of all that is great, all that is loveable in the English temper; of its practical energy, its patient and enduring force, of the reserve and self-control that give steadiness and sobriety to a wide outlook and restless daring, of its temperance and fairness, its frankness and openness, its sensitiveness to affection, its poetic tenderness, its deep and reverent religion. Religion, indeed, was the groundwork of his character. His temper was instinct with piety—the name of God, the thought of God stir him to outbursts of ecstatic adoration. But of the narrowness, the want of proportion, the predominance of one quality over another, which commonly goes with intensity of religious feeling, or of moral purpose, he showed not a trace. He felt none of that scorn of the world about him which drove the nobler souls of his day to monastery or hermitage. Vexed as he was by sickness and constant pain, not only did his temper take no touch of asceticism, but a rare geniality, a peculiar elasticity and mobility of nature, gave colour and charm to his life. He had the restless outlook of the artistic nature, its tenderness and susceptibility, its quick apprehension of unseen danger, its craving for affection, its sensitiveness to wrong. It was with himself rather than with his reader that he communed, as thought of the foe without, or of ingratitude and opposition within, broke the calm pages of Gregory or Boëthius; but the loneliness that breathes in such words never begot in him a contempt for men or the judgment of men. Nor could danger or disappointment check his vivid activity. From end to end of his reign every power was bent to the work of rule. His practical energy found scope in a material and administrative restoration of the wasted land; his intellectual energy breathed fresh life into education and literature; while his capacity for inspiring trust and affection drew the hearts of Englishmen to a common centre, and began the upbuilding of England. Little by little men came to recognize Ælfred as a ruler of higher and nobler stamp than the world had seen. Never had it seen a King who lived only for the good of his people. Never had it seen a ruler who set aside every personal aim to devote himself solely to the welfare of those whom he ruled. It was this grand self-mastery that won him love and reverence in his own day, and that has hallowed his memory

ever since. "I desire," said the King, "to leave to men that come after me a remembrance of me in good works." His aim has been more than fulfilled. His memory has come down to us with a living distinctness through the mists of exaggeration and legend which time gathered round it. The instincts of the people have clung to him with a singular affection. The love which he won one thousand years ago has lingered from that day to this. While every other name of those early times has faded from recollection, that of Ælfred remains familiar to every English child.

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NOTES ON OBSERVATIONS OF TOTAL SOLAR ECLIPSES, 1851—1900.

By R. C. JOHNSON, F.R.A.S.

THE infrequency of total eclipses of the sun at any given locality is somewhat remarkable.

Taking London, as an example, the last eclipse total there dates back to the year 1715, and its immediate predecessor was considered for a long time, upon the authority of the celebrated Halley (a former Astronomer-Royal), to have taken place in the year 1140; this date has, however, subsequently proved to be incorrect, and it is necessary to go back to A.D. 878, in the reign of King Alfred, to find an eclipse total at London.

On the 22nd May, 1724, the last eclipse total in England occurred, but on this occasion complete obscuration did not extend to the metropolis, but passed a little to the north of that city.

During the nineteenth century no eclipse has been total in England, and if we look to the future the interval is still immense, for, during the twentieth century, there will only be two notable eclipses, of which the one in 1999 will be total in the west of England, but not at London.

In the twenty-first century there will occur, in the year 2090, a total eclipse in the south-west of England, visible only for fifteen minutes before sunset, and it has been calculated there cannot be a total solar eclipse visible at London any time before the end of the twenty-fourth century.

As the apparent magnitude of the lunar disc is often

equal to, and sometimes greater than, that of the sun, it would at first appear that there should be a total eclipse of the sun as often as one of the moon. It is owing, however, to the small actual size of the moon as compared with that of the sun (the ratio of their respective diameters being as 1 to 500) that only those places on the earth which happen to lie almost directly under an imaginary axial line, joining the centres of the two bodies, can be covered by the moon's shadow; and in no case can the width of a strip of the earth's surface swept by the shadow of totality exceed 180 miles.

The limit of duration of totality is governed by the same circumstances; this cannot exceed eight minutes, and may be anything less.

It has been calculated that if it had been possible for an indefatigable observer to occupy the best positions at every total eclipse of the sun during the last fifty years, he might have been able (clear skies being granted) to have averaged a period of one minute per annum of totality.

The cause of science has, however, suffered little, for the numbers of observers who have concentrated themselves upon the narrow track of totality during the eclipses of the last fifty years have done much to neutralize this lack of opportunity.

The eclipse of 1842 attracted both Mr. Airey (the Astronomer-Royal) and Mr. F. Baily from this country to the South of France; and the much more arduous journey of M. Louville, who travelled from Paris to London for the express purpose of seeing the total eclipse of 1715 must not be forgotten. A description of this eclipse appeared in *Mémoires de l'Académie des Sciences* for that year.

These were pioneers who opened out the way for the crowded expeditions which are carried out in our day under such comparatively advantageous circumstances.

At the eclipse of 1851 a large number of observers attended; and in the year 1860 there was a government expedition to Spain, and 40 observers went there from this country alone, while Norway, France, and the United States all sent expeditions; and from this time forward, no opportunity, however remote, has been neglected.

An eclipse has always been regarded with popular favour as affording ocular evidence of the accuracy of the calculation of the time of conjunction of the sun and moon, but in the period under review the interest has been transferred from the mathematical to the physical side of the question, owing to the desire to understand something of the nature of the centre of life of our system.

Hofrath Schwabe, of Dessau, was the originator of this line of research, for which he was awarded the gold medal of the Royal Astronomical Society in the year 1857.

Imbued with the idea of discovering an intra-Mercurial planet, this indefatigable observer, beginning in 1826, and continuing for 43 years, rarely missed an opportunity of examining the sun on every day when he was visible.

No success attended this pursuit, but as has frequently happened in the history of science, his critical inspection of the sun's spots led to a discovery of superior value, viz., that of their periodicity—as he himself quaintly observes, “like Saul, in seeking his father's asses, I found a kingdom.”

The work thus inaugurated has been continued to the present time, and auto-photographic records of the sun's appearance are made at several places on each day. The collation of these, with independent records of magnetic variation which are continuously being tabulated, may, at some future time, lead to valuable results.

By far the most important discovery in solar physics is that achieved by Kirchhoff in 1859, which, by showing the

meaning of the absorption bands (known as Fraunhofer lines) in the solar spectrum, opened the door to an infinity of research upon the nature of the elements of which the photosphere of the sun is composed; and since that day spectrum analysis has been the determining factor in the results attained by eclipse observations.

The use of photography, by which observations have not only been multiplied one hundred-fold, but rendered unbiassed by personal equation, has also been of the utmost importance; and a third method, which was first practised during the eclipse of 1898, in India, is that by studious concerted action of amateur observers, long prior to the actual observations on the spot, of diagrams made to resemble various eclipse phases, a wonderful improvement has been found in the fidelity of sketches, made by hand, of the form and extent of the coronal rays when compared with similar drawings made in the absence of such systematic training.

The phenomena observed about the time of, and during totality, occur in the following order :—

Firstly, the formation of Baily's Beads, seen only for a few seconds just as the moon is completely covering with her disc the body of the sun at the time of second contact (which is the commencement of totality), and, again, as totality is broken at the time of third contact. These "beads," which move rapidly along the edge of the two discs, are probably due to irradiation of the sun's intense light, possibly some diffraction effects being also mixed up with it. They are named after Mr. F. Baily, who first investigated them at the annular eclipse at Jedburgh in 1836.

Secondly, just at the moment of totality the chromosphere flashes out, as a narrow ring of brilliant rose coloured light round a portion of the edges of the sun and

moon. The angular extent of this arc of light depends upon the relative diameters (apparent) of the sun and moon, for, as the depth of illuminated stratum does not exceed a few seconds of arc, it is manifest that if the eclipse were just central for a second, this coloured layer might be seen all round the moon's edge, and, conversely, if the totality is of long duration, it might scarcely appear at all. There are always some parts of the chromosphere in a state of great commotion, visible as red prominences, which vary in number and shape on every such occasion—these prominences assume the most grotesque forms, and frequently flame out to a height of over 100,000 miles above the chromosphere.

The third feature of the display is the appearance of the corona coincidentally with totality—this is a faint pearly effulgence, which varies in shape and extent at every eclipse, and is by far the most conspicuous of eclipse phenomena.

A combination is thus presented to the bewildered spectator of unwonted weirdness and grandeur which renders the vision of a total eclipse of the sun the most exciting spectacle afforded by the magnificence of nature, one never to fade from the memory of the favoured observer. It is in the midst of such a scene that science has calmly to perform her duties, and to beware lest one precious moment of time be wasted.

With this general review, we may now pass to a consideration of the order of discoveries by which our present knowledge of the physical condition of the sun has been attained.

It was at the eclipse of 1851 that the red prominences, which were very active and appeared at a great height above the sun's circumference, were believed to be Solar and not Lunar phenomena, and this opinion was proved

conclusively in the year 1860, when Mr. Warren de la Rue, at Riva Bellosa, and Mr. Aguilar, at Desierto de las Palmas, by means of timing the movement of the moon on plates taken at stations 250 miles apart, settled the question finally.

The eclipse of 6th March, 1867, was not a total one, but it was signalized by the observation of a prominence by Ensign Kiha a quarter-hour before the annular phase was established—than which no better proof is possible of the brilliancy and intensity of these extraordinary objects.

In 1868, on 18th August, an eclipse was total for an unprecedentedly long period (6m. 50s.) in India, and an enormous amount of work was done—the gaseous nature of the prominences was established by several observers on the first application of the spectroscope—the work being assisted by the remarkable nature of the prominences then seen. Hydrogen gas, as expected, was ascertained to be one of their constituents.

On 20th Oct. of same year, 1868, Mr., now Sir, Norman Lockyer announced the possibility of seeing the bright lines in the solar prominences without an eclipse, and on the following day M. Janssen announced the same fact to the Paris Academy, with the further information that he had made the discovery the day after the eclipse, viz., 19th August, 1868. Truly a remarkable coincidence.

In the year 1870, 22nd December, a total eclipse in Spain, Sicily, and Africa was rendered noteworthy by the fact that the same two astronomers had curious adventures. M. Janssen made his escape from the siege of Paris in a balloon, with a special instrument for viewing the totality in Algeria, but, through bad weather, was unable to use it, for, as Miss A. Clerke says, "He reached Oran only to find himself shut behind a cloud curtain more impervious than the Prussian lines;" while Mr.

Lockyer, on the way to Sicily, was shipwrecked in the *Psyche*, and only succeeded in obtaining a fleeting glimpse of the wonders of the corona.

Persistent spectroscopic attacks on the prominences have revealed the fact that they consist of glowing hydrogen and some other gases, and have their source in, and rest upon, the chromospheric layer of similar gases; this consists of a thin spherical shell, covering the sun's surface everywhere to a depth of from 2,000 to 6,000 miles.

At this eclipse a further most important discovery was made, that of the "reversing layer."

The method of discovery is as follows:—Just before the second contact the dark body of the moon rapidly closes up the narrow crescent of light remaining on the sun's disc, and it finally goes out; at the very moment this happens, for a space of time not exceeding a couple of seconds, the vanishing absorption spectrum of the sun is instantly changed, line for line of the ordinary solar spectrum, into a bright line spectrum, and this wonderful appearance (not visible to the naked eye, of course) is one of the most entrancing sights among all the beauties of totality. This sight only lasts while the moon passes over about 800 miles of solar surface, which occupies only two seconds, the height of this "layer" being thereby accurately defined. This discovery was a testimony to the prescience of Kirchhoff, for, as Miss Clerke says, "A 'reversing layer' or stratum of mixed vapours glowing, but at a lower temperature than that of the actual solar surface, was an integral part of Kirchhoff's theory of the production of the Fraunhofer lines."

Calcium vapor was discovered in 1882, and, later, manganese, iron, and carbon (probably) have been added to the list.

Lockyer, during the year 1900, investigated the heights

to which different gases ascend in the chromosphere, hydrogen, calcium and helium being the highest.

The theory of the corona cannot be said to be in an advanced state.

It has presented many more difficulties to the observer than the chromosphere and prominences.

It is very faint compared with the sun's light, and, although upon one or two memorable occasions it has been seen before and after totality, it has not been so amenable to investigation either by the camera or the spectroscope.

It evidently varies in intensity greatly from time to time, for it is chiefly the light which it yields that illuminates the heavens at totality, and the reports of various eclipses show great differences in its brilliancy.

It must have been very bright in 1851, when Busch, of Königsberg, caught it upon a Daguerreotype plate.

The next successful attempt was by Mr. Brothers, at Syracuse, 22nd December, 1870.

In 1868, in India, the spectroscope was first applied to the corona, which was proved to be entirely different to the chromosphere in character.

Again, in 1869, Prof. Harkness discovered in the continuous spectrum a single green ray, which, till now, has been a subject for endless controversy. This line was so nearly identical with one of the numerous iron lines that it was then considered that this heavy metal, in a gaseous state, was evident in the corona at a distance of at least a million of miles from the sun's surface. This view, however, has subsequently proved to be erroneous.

In 1871 the sodium line was perceived as a dark line, and, at the same eclipse, Lockyer at Baikul, and Respighi at Poodacottah, perceived hydrogen in this substance 200,000 miles above the sun's surface, and established the

fact that the corona "is of a highly complex construction, being made up in part of glowing vapours, in part of matter capable of reflecting sunlight."

On 29th July, 1878, Professor Langley, at a height of 14,500 feet, on Pike's Peak, saw the corona four minutes after totality extending to a distance of ten millions of miles from the sun, *i.e.*, more than ten times the sun's diameter in extent. This is a marvellous observation, which, though amply credited, has not since been repeated.

In 1885, Dr. Huggins made experiments with the view of photographing the corona without total eclipse; although carried out in the clear air of the Riffelberg, success was not then nor has it since been attained.

In 1887, the most extensive preparations ever made to view a total eclipse were attended by the most wide-spread disappointment; but at one place, Petrowsk, Professor Kononovitsch, of Odessa, succeeded in photographing the green line, provisionally known as 1474 K, or coronium (for want of a better name).

Professor Ramsay, in 1895, discovered a terrestrial origin for Helium in the Norwegian Mineral "cleveite," and so settled the character of many other coronal lines which till then had not been identified.

Two total eclipses were observed in 1889—the first on 1st January from California, and the second on 22nd December from the West Indies. A well equipped party at Cape Ledo, in South Africa, from whose co-operation with those stationed in the Western hemisphere double photographs, intended to shew whether the shape of the corona underwent change in a space of two or three hours, was disappointed through bad weather.

This eclipse entailed a serious loss to astronomy by the death of the Rev. S. J. Perry, of Stonyhurst College, who was well known to students of astronomy in

this locality. Father Perry frequently attended the meetings of the Liverpool Astronomical Society, and was President for a year. (His devotion to duty was extreme, and was exemplified by the long and arduous expedition of which he took command to observe the transit of Venus at Kerguelen Island, in 1874.)

On the occasion of this eclipse he occupied a station on the Isles du Salut, near Cayenne, where there was great mortality among the convicts. Although he became dangerously ill with the epidemic, his characteristic energy enabled him to use the last of his strength to carry through successfully the important observations, after which he was conveyed on board the *Comus*, but did not live to reach Demerara.

The year 1896 was memorable for a new departure, in the despatch of an expedition by the British Astronomical Association (a society numbering over 1000), of 80 of its members to Vadsö, near the North Cape. Clouds unfortunately utterly obscured the sun during the whole of totality, and frustrated the principal object of the expedition.

Their lack of fortune did not, however, prevent the despatch of another expedition, consisting of two parties, by the same society, upon a smaller scale (on account of the distance) to India for the eclipse of 22nd January, 1898. These were in every way successful (*vide Indian Eclipse*, 1898, E. Walter Maunder). On this occasion several important results were obtained, the most interesting perhaps being that Mrs. Maunder, on a small plate, obtained the greatest extension of the corona that has yet been photographed. One ray extending itself to a distance exceeding three-and-a-half times the sun's diameter.

The third expedition promoted by this enterprising society was divided into no fewer than five distinct parties

for the purpose of observing the total eclipse of 28th May, 1900. Stations were occupied by them in the United States, at sea, in Spain, Portugal, and Algeria. *Vide The Total Solar Eclipse, 1900*, by E. Walter Maunder.

There is a part of the subject which is of extreme interest, and which is actively discussed after every eclipse, but which is by no means ripe for judgment, *i.e.*, the connection which mutually subsists between the chromosphere, the prominences, and the corona; and also their liability to be affected by physical changes on the sun.

There seems to be no doubt about the connection between sun-spots and prominences, but what the connection is between spots and the corona is not so manifest, though the character of the corona varies in type at maximum and minimum spot periods. The chromosphere and prominences apparently are subject to the vast attraction of solar gravitation, and the latter attain their enormous height by reason of the violence of their projection, and in spite of the attraction, but the corona is as undoubtedly not controlled by the sun's attraction, but chiefly caused by glare of solar light upon gases and matter that have been brought into his influence in ways about which at present it is not possible to come to any definite conclusion.

In so cursory an attempt to exhibit the state of our knowledge of solar surroundings as revealed by eclipses, many points, for want of time, have been omitted, which might have rendered the subject clearer, especially details of spectroscopic researches upon terrestrial elements and upon gases at varying temperatures and densities, under which, to some extent (*cum longo intervallo*), solar conditions have been approximated to.

It is through the continued application of spectroscopy to solar research at every eclipse that future progress appears most feasible. May we hope that, in a not far dis-

tant future, the sciences of optics and chemistry may solve the difficult problem of showing how such research can be carried out without waiting for these rare and exciting opportunities.

NOTE.

References too numerous to point out in detail have been made to the following :—

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ON PLATO'S COMMUNISTIC THEORY.

BY J. L. RATCLIFFE, B.A.

Good with bad
Expect to hear.

MILTON.

THE dialogue, which is known as the *Republic*, has for its object the discovery of the "true nature of justice and injustice." But since it is easier to read large characters, it is decided to trace in thought the gradual formation of a city, that the way in which justice and injustice enter may be marked. Plato never forgets what is the object of all his speculations, and often recalls his companions if they are going into detail irrelevant to the main purpose.

Whether or not it is true that ideals are painted by the elimination of all supposed imperfections in the real, it is undoubtedly true that Plato was profoundly impressed by the evils which were preparing the Athens of his day for the yoke of the conqueror. His keen observation is never more strikingly in evidence than in those inimitable books of political pathology, in which he traces the course of the ruin of the perfect state. By a succession of deteriorations the state, where justice holds sway, is shown to end in that "most beautiful of all commonwealths," despotism, the rule of injustice. The amusing sketch which he gives of democracy, the next to despotism in the career of ruin, is a remarkably clever caricature of the Athens, made familiar to us by Demosthenes, the Athens whose glory had passed away. For individualism and its attendant evils were supreme. The state was neglected. Whereas in

the days of Pericles all took a pride in embellishing the city, Plato saw his compatriots "build fine large houses, and furnish them in corresponding style."* We cannot perhaps do better than let Plato tell, in his own humorous way, of the lamentable condition into which, in the fourth century, Athens had sunk.

What of her citizens? "First of all, are they not free, and does not liberty of act and speech abound in the city, and has not a man license therein to do what he will? And clearly where such license is permitted, every citizen will arrange his own manner of life as suits his pleasure. Again, consider that in this state you are not obliged to hold office, though your talents may be equal to the task: and that you need not submit to government if you dislike it, or go to war when your fellow-citizens are at war, or keep peace when they keep peace, if you do not want so to do: and again, consider that though a law forbid your holding office or sitting on a jury, you may, nevertheless, do both the one and the other should it occur to you to do so. . . . How magnificently such a commonwealth refuses to trouble itself in the least about the previous pursuits of those who enter on a political course, whom it raises to honour, if only they assert that they wish well to the commons."† The citizens of this "agreeable, lawless, parti-coloured commonwealth, which deals with all alike on a footing of equality whether they be equal or not,"‡ "end by making light of the laws themselves, in order that, as they say, they may not have the shadow of a master."§ "Beggars and persons who hunger after private advantage take the reins of government with the idea that they are privileged to snatch advantage from their power."|| The ignorance of those who controlled the affairs of state called forth the ridicule of Plato as of

* Par. 419. † Pars. 557, 558. ‡ Par. 558. § Par. 568. || Par. 521.

Socrates before him. The mutinous sailors who bind the captain, and will not take on board the true pilot, are the men who ruled Athens.* The simile of the huge and powerful monster, whose caprices are ever humoured by its keepers, reveals the arts of the demagogues in winning over the powerful Athenian assembly to their side for the furtherance of their own exclusive interests.†

In such a commonwealth, thought Plato, injustice had an almost uncontested course. What, then, did he conceive to be the essence of justice?

Briefly, the performance of appropriate function. Every man, every thing has its place; justice demands that every man and every thing should remain in its place. Whosoever undertakes tasks for which he is not fitted, or shrinks from that for which he has peculiar abilities is, to Plato's mind, unjust. Justice reigns in the soul, when each of the component elements, the rational, the spirited, and the appetitive, fulfils its assigned duty, and does not attempt to usurp another's place. If there is not complete unanimity as to the right of the rational element to claim the obedience of the spirited and appetitive, then injustice is laying the foundations of her throne. So, in the state, unless the auxiliary and productive classes, which correspond to the spirited and appetitive elements of the soul, acquiesce in the rule of the philosopher-king, injustice reigns. But how is she to be ejected? How are the evils, which are welding the chains of an intolerable tyranny, to be remedied? How is that huge and powerful monster to be kept in subjection, and taught that its whims and caprices are not always to be studied? How are the able-bodied citizens to be persuaded to put off their indolence, and prepare at need to take the field in support of the true ruler? How, in fine, is the philosopher-king, the true

* Par. 488. † Par. 493.

pilot, to be established at the helm of the state? Was any remedy at hand?

*Linguenda tellus et domus et placens
Uxor.*

Communism was no novelty in Greece. Plato's mythological Atlantis had been, to some extent, realised in the Lipara Islands, where, at the beginning of the sixth century, colonists from Rhodes and Cnidus founded a state on communistic principles. Part of the citizens tilled the land, and part guarded the coast. The common-meals, which prevailed in the Dorian cities of Crete and at Sparta, were, at any rate, a step in the right direction, and are mainly accountable, we may suppose, for the approval with which Plato regards those states.* Above all, there was growing up at Athens a partiality to communism among the poorer citizens, a partiality which was the almost inevitable outcome of the spread of individualism. For great poverty prevailed by the side of great riches. The poor, unable to find leisure for politics through the necessity of finding for themselves a livelihood, fled to communism as that which alone had power to make their boasted liberty something more than mere liberty to die, and their vaunted equality with the rich a thing of fact.

Communism, too, was Plato's panacea. But communism carried to its logical conclusion. The remedy which he would apply to the evils of the body politic is not less heroic, not less drastic than those which he recommends for the evils of the physical body. A good physician, he thinks, should not make use of drugs when there is need of the knife.

"If the constitution of the state is to be carried to perfection, it must recognise a community of women, a

* Par. 544.

community of children, and of education in all its branches; and, in like manner, a community of pursuits in peace and war. Its kings must be those who have shewn the greatest ability in philosophy, and the greatest aptitude for war. As soon as the rulers have established their position, they are to take the soldiers, and settle them in dwelling-places of a certain description, in which, by our direction, no private rights are admitted, but which are the common property of all. They shall not hold any such property as is commonly held at the present day, but in their capacity as trained soldiers and guardians they ought to receive, in return for their guardianship, year by year, from the other citizens, the maintenance required by their position, and devote their attention to the whole state, including themselves." *

Plato anticipated great opposition, as well he might, to his scheme; he expected "large numbers of by no means contemptible assailants to rush desperately upon him without a moment's delay, after throwing off their upper garments, as it were, and grasping the first offensive weapon that comes in their way."† The opposition is in the main as strong to-day as it was two thousand years ago. In their haste the assailants seize weapons which are often out of date; yet many a telling blow may be dealt.

Before considering the proposal in detail, we may note that it is not all in the state that are forbidden to hold private property. This is sufficiently clear, one would think, from the provision made that the other citizens shall render to the guardians, in return for their services, the maintenance required by their position. But since there seems to linger doubt in the mind of so considerable a scholar as Jowett, it will be perhaps excusable to point

* Par. 543. † Par. 474.

out that the evidence on this rather important point is quite unequivocal.

In the ideal state there are three classes, determined by psychological analysis. There are rulers, the philosopher-kings, who are cognisant of the world of ideas, and fashion the institutions of their state after "a pattern laid up in heaven." There are the auxiliaries, whose duty it is to enforce the commands of the philosopher-king. These two classes are together named the guardians, and it is to them that the prohibition of private property applies. Thirdly, there is the productive class, comprising all those who give themselves over, in whatsoever way, to the acquisition of wealth; the huge monster which must be kept in subjection. Plato recognises inequality of natural gifts, and divides the state into classes, which consist of men in whose souls the rational, the spirited, the appetitive elements are respectively predominant. But that the rule of reason might be more readily acknowledged, and that the guardians may the more easily resist the temptations which the pleasure of private property present, Plato relates his famous myth of the earth-born,* at the expense, it may be, of the Athenians, and their favourite boast that they were autochthonous. "We shall tell our people in mythical language: You are doubtless all brethren, as many as inhabit the city, but the God who created you mixed gold in the composition of such of you as are qualified to rule, which gives them the highest value; while, in the auxiliaries, he made silver an ingredient, assigning iron and copper to the cultivators of the soil, and the other workmen. The rulers, therefore, have received this in charge first and above all from the gods, to observe nothing more closely in their character of vigilant guardians than the children that are born, to see which of

* Par. 415.

these metals enters into the composition of their souls; because there is an oracle which declares that the city shall then perish when it is guarded by iron and copper."

As for the guardians, that they may not lose vigilance by a desire for earthly wealth, "we must tell them that they are in perpetual possession of a divine species of the precious metals, placed in their souls by the gods themselves, and therefore have no need of the earthly ore; that, in fact, it would be profanation to pollute their spiritual riches by mixing them with the possession of mortal gold, because the world's coinage has been the cause of countless impieties, whereas theirs is undefiled. Therefore to them, as distinguished from the rest of the citizens, it is forbidden to handle or touch gold and silver, or enter under the same roof with them, or to wear them on their dresses, or to drink out of the precious metals."*

If more explicit statement were needed of the fact that communism is restricted to the guardian classes, it would indeed be sought in vain, for Plato never, in so many words, says that the members of the industrial classes shall be privileged to have houses, and lands, and wives of their own. But there is abundance of evidence none the less convincing because less patent to the eyes of the casual observer. We may adduce one fact. Freedom from law-suits,† from the vexations and embarrassments which are inseparable from the bare maintenance of a household,‡ is one of the results of communism, which, together, make the life of the guardian more blissful than that of an Olympian victor. When, then, we find Plato arranging for the administration of justice in his ideal state,§ and refusing to legislate on questions of minor importance,|| we may reasonably infer that communism,

* Par. 417. † Par. 464. ‡ Par. 465. § Par. 488. || Par. 425.

with its beneficial results, was not enforced on the members of the industrial class.

We have said that Plato held communism to be the panacea for the evils which had Athens in their grip. Two questions naturally arise. How does communism effect its end? And how does it avail, seeing that its application is restricted to the guardians, confessedly "the smallest of all classes possessing this or that branch of knowledge, and bearing this or that name in consequence?" *

There will be few found to deny that strife is due to the desire of all men to gratify the instincts of appetite, and checks which the rights of private property impose on their gratification. War arose, according to Plato, when citizens were so given over to the accumulation of wealth that land for pasture and tillage failed, and it became necessary for them to cut a slice out of their neighbour's territory.† Civil strife entered the state when its citizens ceased to apply the terms "mine" and "not mine" to the same objects, when some were pleased and others equally grieved at the same events affecting the city and its inmates.‡ In fine, community of interest is only possible when there is community of property. Almost all the cities of Greece, as Plato says,§ contained at least two cities within one wall, a city of the rich and a city of the poor, hostile one to the other. And inasmuch as none of the cities of Greece were fashioned on the lines laid down by Plato, the men of ability were sometimes rich and sometimes poor, so that there were ever some able men to support each faction. But in the perfect state care has been taken for the promotion of all gold and silver children, which may by chance be born among the citizens of copper and iron. There may, then, and will be diversity of interest in the state, but it will no longer rend and tear

* Par. 428. † Par. 373. ‡ Par. 462. § Par. 423.

the state asunder, so long as "the men of the auxiliary class be free from internal dissension." * The strength of this argument is irresistible. If those that rule and those who enforce their commands be agreed, no danger need be apprehended. It was in Greece a common political phenomenon for a tyrant to rise to power by deserting the oligarchy to which he belonged, and espousing the cause of the people, ending up with that "notorious device," the request of a bodyguard that the popular champion might be protected. And it is a law of wide application that "changes in the constitution originate in the governing body, and only when that body becomes the seat of dissensions."† In the ideal state, at any rate, the law holds fast. For even if the people, *i.e.*, the industrial classes, the bulk of the population, were to neglect the lesson of the myth of the earth-born, and to defy the coercion of the strongly posted auxiliaries, who could lead them, provided that the task of selection had not been overlooked by the duly appointed officers, provided, too, that the auxiliaries still dwelt in enjoyment of the blessings of communism, and retained the conviction that they ought to preserve the established constitution? The people would be without a leader; and the ungoverned mob would soon begin to quarrel amongst themselves, and thus render their revolt ineffectual. The firm head and the strong arm would easily keep in control the unruly members, and restore them to their allegiance. Thus we may feel satisfied that Plato's ideal city corresponds most nearly to the condition of an individual man, whose whole frame responds in sympathy to the hurt of the least of its members. The citizens in the industrial classes would not be allowed to pursue wealth to the ruin of the state; their happiness would not be considered to the exclusion of the

* Par. 465. † Par. 545.

happiness of the whole state. But with these restrictions we may gather that the guardians would promote their pursuit of wealth, and do all in their power to enhance their happiness consistently with the belief that the object of the state is not to make any one class pre-eminently happy, but to make the whole state as happy as it can be made.*

We have remarked earlier how clear it is that Plato was profoundly impressed by the evil condition of Athens. It is interesting to notice to what a degree the remedies which he suggests would be effective. The city would be ruled by men who combined philosophical ability with aptitude for war; men who did not snatch at power, but "entered upon their administration as an unavoidable duty;"† men who were beyond the reach of bribery and corruption inasmuch as they were wealthy, "not in gold, but in a wise and virtuous life, which is the wealth essential to a happy man."‡ To enforce their commands they have not to resort to a swashbuckler with his band of mercenaries, some venturesome Charidemus, but to a trained band of citizen soldiers, devoted to the welfare of the state, and taught to recognise that its happiness and welfare are the condition of their own. The rest of the citizens are not allowed to do what they like; in their pursuit of private gain they must not transgress the limits set by the wisdom of their rulers. Wealth would be more evenly distributed among them by the sifting from their numbers of those endowed with sufficient ability to warrant their appearance among the men of silver or of gold.

Throughout the state there would be unanimity as to who ought to rule and who ought to obey. At last, by the union in one man of political power and philosophy there will have come deliverance for cities and for the human race.§

* Par. 420. † Par. 520. ‡ Par. 521. § Par. 473.

There remain to be considered the questions which are interwoven with those provisions in the communistic theory which affect womankind.

We are told that "male and female guardians are to have all their pursuits in common"; and that "these women shall be without exception the common wives of these men, and that no one shall have a wife of his own: likewise, that the children shall be common, and that the parent shall not know his child, nor the child his parent."*

The first clause of this proclamation is not likely to shock us as much as it would undoubtedly shock the ancient Greeks, accustomed as we are to see the weaker sex breaking down every barrier which checks their onward progress to the complete attainment of Plato's wish, the equality of the sexes. But things were not so in the days that are past. Athenian women of repute were taught to regard as their greatest glory the obscurity of their fame among men, whether for good or for bad. They were accustomed to keep within the doors of their houses unless some public festival, some public or private funeral warranted their appearance in the streets of Athens. Xenophon relates how that his friend Ischomachus bade his virtuous wife take exercise by folding and re-folding the household linen. In short, Athenian women of repute were in a condition somewhat worse than that which was endured by respectable English girls till the middle of the nineteenth century. We can barely imagine then the consternation which Plato's announcement would make, that women must share in the education, and in the pursuits, warlike and peaceful, of the men. The equality is to be complete. After describing the advanced education of those who are fitted to sit at the helm of the state, Plato avows that his remarks are not intended to apply any

* Par. 457.

more to the men than to the women, "so long as we can find women whose talents are equal to the situation,"*—a reservation which will be thought by many to be superfluous. In his rebellion against the degrading restraint which was imposed on respectable Athenian women, Plato is obeying, he thinks, the mandates of justice. Nothing more and nothing less than the performance of appropriate function will satisfy her demands. If, then, as Plato firmly believed, "there is no difference, so far as the guardianship of the state is concerned, between the natures of the man and of the woman," he was justified in demanding that there should be no difference in the duties assigned to them. "We shall have to select duly qualified women also to share in the life and official labours of the duly qualified men."† The question at issue is perhaps insoluble. Writers, in prose and verse alike, have descanted on the mutually supplementary qualities possessed by man and woman, on

The double-cell, beating with one full stroke
Life.

Unequivocal proof is perhaps impossible. Yet, though we may point now to Artemisia, whose valour at Salamis wrung from Xerxes the cry that "his men had become women, and his women men," and now to Aspasia, whose political wisdom a Pericles did not disdain to consult, the majority of people will be prepared to recognise that an insuperable barrier has been fixed by nature to prevent the complete equalization of the sexes. Whether Plato had a clearer view into one of the greatest mysteries of life, or was merely led astray by an undue pressure of the analogy of the watch-dogs,‡ some praise is due to him as to one who would have lifted Athenian women from the degrading restraint which they were forced to endure.

* Par. 540. † Par. 456. ‡ Par. 451.

The remaining clauses in the proclamation which abolish the institutions of the family and of marriage, will—we had almost said, for ever—meet with the most determined opposition. All men, all civilized men have, rightly or wrongly, come to the conclusion that the family is a necessary institution. At one fell stroke Plato is thought to demolish the foundations of public and private morality. The charge is a weighty one. Kin to kind is the normal progress for human affections. Where are the kin? To this Plato will answer that “no younger man will insult his seniors: for there are two warders that will effectually interpose, namely, fear and shame: shame restraining him from laying hands on one whom he regards as a parent; and fear, lest the person attacked should be succoured by the rest in the character of sons, brothers and fathers.”* But what will happen if perchance the filial affections of the young man are weakened, not strengthened, by the width of their operations?

Another objection is raised that large institutions inevitably fail to take into account the idiosyncrasies of each particular child, without regard to which the development of character is impossible. Plato would perhaps have answered that parents have shown their inability to train their children, and shall accordingly be deprived of their charge. Yet another objection is that affection for the state, and still more for humanity at large, is not possible without the institution of the family. As the rings which, when a stone is thrown into the pool, spread out wider and wider till they reach the side, so must the affections centre in the family, and emanate thence in ever-widening circles. Here we can fancy that Plato would smile as he pointed to Athens, where the rings never reached the side, and where the affections centred permanently in the family. Indeed,

* Par. 465.

the disintegrating influence of family life is the cause, or or rather one of the causes, why he decreed that his guardians should possess neither houses nor wives of their own. There was another cause. Seeing that dog-fanciers exercised great care in the selection of the best dogs for breeding purposes,* Plato thought that his hymenæal festivals should be arranged with surely not less care. The potency of this argument cannot well be tested. It meets with the bitterest opposition, because it introduces law where we think

We live

Law to ourselves.

The whole range of marriage customs advocated by Plato are of a peculiarly savage type, and do not invite inspection. If any one be tempted to pursue the inquiry he will find that they bear a remarkable resemblance to the customs which, at the present day, obtain among many of the savage "packs," the most primitive savages which people Central and Northern Australia.

Plato's only apology is his unflinching honesty of purpose. "The highest perfection of the state is due to the community of wives and children, which is to prevail among our auxiliaries."† Some praise is always due to the man who, in the face of obstinate resistance and embittered prejudice, holds fast to that most excellent maxim that "the useful is the noble, and the hurtful is the base."‡

There is an argument to which every communistic theory is subjected. Objectors say that since communism tends to simplify the problems of the moral life, it tends also to dwarf the moral stature. The truth of this is indubitable. Moral strength is the outcome of moral temptation; and we can scarcely refrain from surmising

* Par. 459. † Par. 464. ‡ Par. 457.

that the guardians would be not moral, but, perhaps, innocent. For the moral virtues, indeed, Plato seems to have a slight contempt. "They resemble," he says, "the virtues of the body, inasmuch as they do not pre-exist in the soul, but are formed in it in the course of time by habit and exercise; the virtue of wisdom, on the other hand, does most certainly appertain to a more divine substance."* He had such a distinct preference for the element of reason, which alone he seems to have considered immortal, that he thought "virtue, unaided by philosophy,"† of small avail, and was willing to discard the means by which such a virtue is attainable.

We are now inclined to agree with the words of Glaucon:—

"But I really think, Socrates, that if you be permitted to go on in this way, you will never recollect what you put aside some time ago before you entered on all these questions, namely, the task of shewing that this constitution of things is possible, and how it might be realized. For, in proof of the assertion that if it were realized it would ensure all kinds of advantages to a city which was the seat of it, I can myself adduce facts, which you have omitted, as, that such soldiers would fight to perfection against their enemies, in consequence of the unwillingness to desert one another which would arise from their knowing one another as brothers, fathers, and sons, and using these endearing names familiarly: and if the female sex were to serve in the army, whether in the same ranks with the men, or posted as a reserve behind to strike terror into the enemy and render assistance at any point in case of need, I know that this would render them invincible: moreover, I see all the advantages omitted by you which they would enjoy at home. But as I fully admit the

* Par. 519. † Par. 619.

presence of all these merits, and a thousand others in the constitution, if it were brought into existence, you need describe it no further. Rather let us try now to convince ourselves of this, that the thing is practicable, and how it is practicable." *

Against the feasibility of communism there is always brought the objection that the motive required in those who practise communism is higher than is found to actuate the average man. There is another objection commonly made that schemes of communism, though they may be practised by a select and small body, are not capable of being accepted as a rule of life by the whole human race. This objection, however, is not applicable to Plato, seeing that, for his purpose, communism need only be practised by the minority in each city-state. The former objection, however, holds to some degree good. But let us first hear Plato's answer.

"Our theory of the state is not a mere aspiration, but, though full of difficulties, capable of realization in one way, and only one, which, as we have said, requires that one, if not more, of the true philosophers shall be invested with full authority in a state, and condemn the honours of the present day in the belief that they are mean and worthless; and that, deeply impressed with the supreme importance of right, and of the honours to be derived from it, and regarding justice as the highest and most binding of all obligations, he shall, as the special servant and admirer of justice, carry out a thorough reform in his own state." †

We may admit that the ideal state is just within the realms of possibility. In the "Laws" Plato lays down 5,040 as the number of citizens which should occupy his state; of these perhaps 1,000 ‡ might be guardians. A

* Par. 471. † Par. 540. ‡ Par. 423.

doubt may well be raised whether so great a number would be found ready to surrender everything that men count most dear for their love of the state.

"All who are above ten years old in the city must be despatched into the country, and their children must be taken away from their parents' influence, and bred up in the manners and laws of the true philosophers, whose nature we have described above." *

Even then, we think, the instincts which prompt men to lay their hands on certain things, and claim for their own, would break out, and put an end to the rule of the philosopher-king. The many-headed monster of appetite † is not destroyed by the creative fiat of any philosopher-king; and many have ere now found that

Who overcomes by force
Doth overcome but half his foe.

The lesson that may be learnt from the various communistic societies which have passed along the world's stage since the Apostles lived together and had all things in common, is that the ineradicable instincts of human nature cannot be with impunity ignored. Those who think to establish the reign of righteousness before its time on earth, are counting on motives which have little or no existence. As to the evils which they hope to remedy,

They do but skin and film the ulcerous place,

which gathers strength unseen, and at last breaks forth again with irresistible violence to the ruin of the whole body. It was even so that the majority of those societies which have arisen on communistic principles fell prey to the very evil which they arose to correct. Even so would the reforms of the philosopher-king prove ineffectual. Their dissolution would be due not, we think, to the

* Par. 541. † Par. 588.

failure on the part of the guardians to catch the auspicious season for the celebration of the hymenæal festivals.* Good institutions gather force like a wheel † in their progress, and are not to be checked by the first barrier. The dissolution of the perfect state is inevitable because this fundamental law of all moral and political progress has been overlooked, that "a good body will not by its own excellence make the soul good, but, on the contrary, a good soul will by its excellence render the body as perfect as it can be made." ‡

. The translations are given according to the version of Davies and Vaughan. The references are to the paragraphs.

* Par. 544. † Par. 424. ‡ Par. 403.

THE PROBLEM OF CONSCIOUSNESS.

BY R. F. GREEN.

It is a winter afternoon, and a lady is sitting by the fire reading. At her feet, on the hearthrug, a child is playing quietly with a doll, and a cat, overcome by the warmth and a diurnally recurring drowsiness, sleeps—lying on its side with legs and tail stretched out lazily.

The woman is absorbed in her book, it is *The Mill on the Floss*, and she has nearly finished it; she breathes quickly; a slight sob escapes her, and her eyes fill with tears. The awful pathos of poor Maggie's life appeals to her as it has appealed to all of us. She ceases to read, and sits musing, book in hand.

Meanwhile, the child, tired for the moment of her playing, has made her doll sit down, propped up against the cat, and this, of course, pussy resents. She is disturbed, and too sleepy or lazy to move, shows her irritation by an ominous waving of her tail. No notice being taken, and dolly being indifferent, too, to the annoyance she is causing, the cat rouses herself—the child puts out her hand to the rescue of her plaything, and receives a quick blow and scratch. Her cry startles the mother, who, letting her book fall, springs up, takes the little one in her arms, kisses and soothes her—the cat, running to the door, tries to get out of the room. Incidents more familiar and commonplace than these can hardly be imagined, and yet they illustrate phenomena perhaps the most inscrutable that nature presents to us. The transmission of complex abstract ideas by means of arbitrary signs—the effect of

such ideas, which are probably outside of one's own personal experience, upon the physical functions—the woman is reading an imaginary biography—no such experiences as those of Maggie Tulliver have been hers—she draws her breath—her heart beats quickly—she sobs. The wonderful maternal instinct in the little one who loves and cares for her doll just as the mother loves her child—the cat, sleepy in the daytime like its cousin in the Indian jungle, and despite every incentive to nocturnal slumber—its selfish resentment at being disturbed—its expression of anger by lashing its tail, a habit it has in common with other members of its genus—the vicious attempt to revenge itself for a slight discomfort—its fear of punishment—the cry of the child following instantly on receiving the wound—the start of her mother, and the involuntary dropping of her book—the effect of her sympathy upon the child in relieving its pain and lessening the effect of the shock upon its nerves.

We can describe these phenomena, we can point out even the nerves and muscles which produce them, but what it is that brings these nerves and muscles each in their turn into play—how we come to think, and remember, and act as we do, are secrets that we are fain to admit must lie for ever beyond us. They are part of that great mystery we call life, they come with us out of the mist, stand out sharp and clear in the pageant of experience that is moving so quickly before us, and we are in the mist again, and have *only* seen—have understood nothing. The phenomena just indicated represent some of the highest and most complex forms of consciousness we can recognize—indeed, the ability to convey and receive abstract ideas by means of language is peculiar, so far as we know, to the highest organism—man. Consciousness, apparent to us in other forms of life, is a simpler expression, but

differing, as we shall see, rather in degree than in kind as we descend the scale of living matter.

It is to be assumed that there is no risk of misconception in the use of such terms as *living organism* and *life*. The living organism is an entity which grows by absorption from outside, and which is capable of reproduction. It may have other functions; it always has in fact; but these two are essential. Its functions, separately considered, present to us the phenomena we call consciousness, and the sum of the functions, be they few or many, of an organism we call life. To state the case inversely: life is shown to us by acts of consciousness only, we have no other means of distinguishing between dead and living matter. Consciousness may further be described as *effort to a definite end*. We may not recognize the particular end in view, but if a purpose is obvious we must admit consciousness. We see a man making calculations on a piece of paper, though we do not know the problem he is working out; we have a heated discussion with a political or theological adversary, and we tell him, after a long speech, that we don't know what he is driving at; but none the less we admit these acts imply consciousness. The definition—effort to an end—is the basis of the present Essay. It may be insufficient, it may be incorrect, and it is certainly open to drastic criticism, it is, however, the best I am able to formulate, I cannot find another which will embrace such facts as have to be collated. And simple as the definition seems to be at first sight, it gives us quite enough to think about, the statement of the problem even on these lines is no easy matter, and, moreover, brings us no nearer to its solution. If it helps to make clear the relation of the various phenomena life presents to us, that is all we can ask of it, and it will have served its purpose well.

Let us begin, then, at the beginning. The earth in its solemn swing, the planets in their never hastening, never tiring procession—do they give us any sign of consciousness? None that we have yet recognised. Their motion is apparently impressed upon them by the one great force which binds other solar systems together, and which controls them no more and no less than it does the smallest grain of sand upon our sea shores. Regarded as one body, each planet seems under the complete dominion of the force of gravitation—*subject* to it as we see by its axial and orbital revolutions, *exercising* it as we see by its inducing like revolutions in its satellites. No purpose is evident to us. In fact the very regularity of these motions would of itself forbid our thinking of them as conscious. Regular invariable motion of any kind seems opposed to consciousness; irregular variable motion seems to imply it. When we come, however, to regard the *matter* of which our planet is composed, a very different series of phenomena presents itself. A careful examination reveals to us some 68 substances, which, with the means now at our disposal, we cannot reduce; they are called, therefore, elementary substances, and it is they and their combinations which account for all matter on the earth. These elementary substances exist in widely different conditions, some—oxygen and hydrogen, for instance—are gases at ordinary temperatures; mercury and bromine are liquid; the greater number are solid. Some, like gold, are found native pure, but in most cases they exist in nature only in combination, and can be isolated only with great difficulty. Their combinations are found to be regular and in definite invariable proportions, following a law which has been formulated by comparisons of their relative weights. Thus, taking the lightest of the elementary substances, Hydrogen, as 1, we find oxygen always combining as 15.96, or a

simple multiple of that number. This, moreover, represents the weight of oxygen, bulk for bulk, under equal conditions as compared with Hydrogen—that is, if a globe filled with hydrogen weighs 1 lb. net, the same globe filled with oxygen, under exactly the same conditions of temperature, pressure, etc., would weigh 15.96 lbs. net, and if filled with mercury would weigh 199.8 lbs.

These figures: H = 1,

O = 16,

Mercury = 200, gives us the invariable proportions of H, O, and Hg. in their respective compounds. Take a simple example: Water, H_2O , is a compound of two parts of H and one of O. (We eliminate fractions for the sake of brevity).

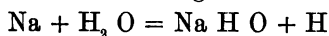
2 parts of H = 2

1 part of O = 16

18

so that in 18 ozs. or 18 lbs. or 18 tons of water there will be 16 ozs. or 16 lbs. or 16 tons of oxygen, and 2 ozs. or 2 lbs. or 2 tons of hydrogen, and this of course can be proved empirically. These facts, and some others arising out of them are embodied in the atomic theory. Matter in its original form is supposed to exist in grains or atoms all of the same size, so that if we could get an atom of oxygen it would weigh 16 times the atom of hydrogen, and the mercury atom would weigh nearly 200 times the hydrogen atom. These atoms represent the smallest quantity of the substance that can exist even in combination, and it is suggested that if by any means we could divide an atom of silver, for instance, the resulting parts would not be silver at all, but that primary form of matter from which silver and all the elementary substances are derived. This, of course, is a supposition, but it is one to the truth of which

facts point. Now, in connection with the combination of these atoms some significant facts are to be noted: Mix H and O in a glass bottle—both are colourless gases, and you have a colourless transparent mixture; the gases are only mixed, they have not combined. Expose the bottle to the sun; an explosion takes place, and the gases have combined to form water. If there was a wrong proportion of H or O in the bottle—that is, if there were not exactly two parts by volume of hydrogen to each part of oxygen, the surplus quantity would remain uncombined. Continue the experiment: take the water produced by the explosion, place in it another elementary substance, sodium, the water is again decomposed, one atom of the sodium combining with one atom of the O and one atom of the H to form caustic soda, the remaining



atom of H being set free. The atomic weight of sodium as compared with H is 23, so that if we had 23 lbs. of Sodium and 18 lbs. of water, we should have exactly

Na 23

H 1

O 16

—

40 lbs. of Na H O

and 1 lb. of H.

And if we put 24 lbs. of sodium into 18 lbs. of water, 1 lb. of H. would still be set free, and 1 lb. of sodium would remain uncombined. If we had put gold or platinum in the water instead of sodium, no change would have taken place, these metals not having the power to decompose water as sodium does. There is no need to cite further examples, every text-book of chemistry will furnish them, and we have only to indicate the unexplained force of chemical affinity. How is it that every atom of O in a

mixture of H and O combines with two atoms of H and no more, to form water? How is it that in no circumstances can we get an atom O to combine with more than two atoms of H? (If an atom of O cannot get two atoms of H, it will combine with one, but the combination is highly unstable, the O is always on the look out, so to speak, for the other atom of H, and seizes the first that comes in its way). How is it that the atom of sodium can displace an atom of H in water, forming caustic soda, while neither gold nor platinum can do so. I do not know. No one knows. But it is here, I submit, somewhere here among these elements of our earth's crust, that we must look for the solution of the problem of consciousness. And let us beware at this point of an almost inveterate tendency to dismiss such questions as these by postulating an anterior force of any kind. It is easy to say—one section of the community is constantly saying it—yes, these atoms display certain powers, certain qualities, but their powers and qualities were given to them, impressed upon them by another power outside and beyond them. The matter cannot be in this way settled. The difficulty has only been put a step further back, and in putting it back we don't overcome it, we increase it immensely, since, if an outside unknown power has impressed these elementary substances with their known functions, this outside power must continually operate, it must always have operated, there can be no limit to it. Our minds refuse, however, to conceive of such a power as this. Such as our experience is, it is finite, it has reference only to existences of which it is cognizant, and of which the beginning and end can be conceived. Power, apart from an existence is inconceivable. We may use phrases or terms which, by repetition, have become familiar, but on examination they answer to no mental conception. If we cannot conceive of

matter as eternal, still less can we conceive of an eternal force, and the latter formula has, moreover, the additional tax upon our imagination that its finite expression transcends our experience. We have experience of matter, and so far as we know, it may be eternal, we have no experience whatever of force apart from matter affected by it. But we must continue our experiments. Take a portion of salt and dissolve it in water. Water, as is well-known, has the power of separating the atoms of certain substances, and of holding them in suspension. This is quite different from combination. Sodium does not dissolve in water, it decomposes it. Potassium monoxide K_2O does not dissolve in water, but combines with it to form caustic potash. On the other hand, sugar, salt, and numberless other substances dissolve, and, as we shall see coalesce, and return to their original form if the water is taken away. We take then a portion of common salt and dissolve it in water. The result is a clear liquid which we will divide into two parts, and put into two glasses. To glass No. 1 we will apply a gentle heat—heat is not necessary, but it expedites matters—the result in either case is, of course, to evaporate the water slowly, and as this is driven off, crystals of salt begin to form in the shape of cubes. If we watch them carefully we shall find that they spring into a definite shape, and grow. If the evaporation is very slow, few crystals are formed, but they grow to a comparatively large size; if the evaporation is rapid, the crystals are more numerous, but they remain small. Continuing our experiment until all the water is evaporated, let us examine the result, the glass is lined with crystals, all of the same shape, some have grown together, it is true, but a comparison of their exposed angles will convince us that they are all of the same shape—a cube. A series of similar experiments would have the same result.

Salt slowly evaporated crystallizes in cubes. Substitute cane sugar for salt, and we have crystals in the form of oblique prisms, substitute alum and we have octohedron crystals always. We will leave now our other glass of the salt solution for a moment in order to look at some other crystal formations. The elementary substance, boron, which is ordinarily an amorphous powder, crystallizes under favourable conditions into regular octohedra, combined with oxygen and water, which latter, by the way, crystallize in the form of hexagonal prisms, boron forms boracic acid, which again crystallizes, not into octohedra or prisms, but into thin plates something like talc. A still higher salt of boron, common borax, which is a combination of sodium and boracic acid, crystalizes in rhombic prisms, all these forms being invariable.

Borax,	{	Boron, octohedron.
Rhombic		Water, hexagonal prisms.
prisms.		Boracic acid, thin plates.
		Sodium.

The differences in form follow no law that we have been able to formulate, and are altogether unaccountable. We will now go back to glass No. 1, which it will be remembered contains salt crystals evaporated to dryness; we will take one of these, the largest for choice, and with a hammer break a portion from one of its edges, placing the broken crystal in glass no. 2, containing the remainder of the salt solution. What happens now? Slowly and carefully the broken surface is being filled up as the water evaporates, small portions of salt are arranging themselves, not on the sides of the crystal, but on its broken edge, repairing the damage done, bringing back the crystal to its proper shape. We have thus to record the definite and regular forms assumed by comparatively simple substances, whenever the atoms composing them are free to

arrange themselves. The striking changes in form resulting from combination with other substances, the growth of this form in size (the smallest crystal of alum is as perfect an octohedron as the largest), and lastly, the power to adjust accidental irregularities. Surely there is evidence here of a force inherent in matter, of a force working to a definite result, but we know it only empirically, and cannot predict it in a single instance.

Another phenomenon displayed by elementary substances and their combinations is that of allotropy or isomerism. The same substance takes different forms and properties. Oxygen on being electrically disturbed becomes slightly odorous, and exerts a marked chemical action distinct from the gas in its normal condition. The two forms are chemically identical. Phosphorus in one form is a yellow waxy substance, so highly inflammable that it must be kept under water; in its other form it is a red powder, familiar to us on the sides of safety match boxes, hardly inflammable at all. The compounds of both forms are identical. Similar phenomena, rare among elementary substances, become less so as their compounds become more complex; so that when we enter the domain of organic chemistry, isomerism, to an increasing extent, becomes almost a rule. Butyric acid, which gives the delicate flavour to fresh butter and is mainly responsible for the offensive smell of that product when stale, is chemically identical with acetic ether, the flavouring principle of apples. The marked difference in the flavour of certain wines grown in the same district, or even in neighbouring *vineyards*, between Chateau Lafite and vin ordinaire, or even between the Chateau Lafite of a good and a bad year, are due to differences inestimable by chemists in their constituents; while brewers have long recognized the necessity of breeding from a single yeast

organism. The study, in fact, of the properties of these higher organic compounds, formed, it may be, in our laboratories, brings us to the threshold of life in the vulgar acceptance of the term. We see that all the facts are pointing that way; greater stability, generally in the simpler natural compounds—generally less stability as compounds become more complex. And, moreover, the study of the elementary substances and their primary combinations is not without its use in indicating the lines and direction of further development. In what form is this most likely to take place, and in connection with what substance? The solid form obviously is least amenable to combination. But few solids will combine at all, and when they do, the result is frequently a reversion to a more liquid state.

Gases, on the other hand, combine too freely and offer too little resistance to outside forces, they have no coherence, they readily become diffused and dissipated. The middle or liquid state is most promising. Substances in this form combine with comparative freedom, and, though mobile, will resist considerable pressure. Liquids, however, show a persistent tendency to revert, when conditions are favourable, to the solid form of crystals, and this reached, there is an obvious bar to further development. A liquid which does not crystallize, but of which the component atoms can retain, so to speak, their individual powers, would seem of all forms to be the best, and it is certainly one that organic nature produces in her laboratory on a liberal scale. Matter in this liquid non-crystallizable state is called colloid—glycerine and the white of egg are familiar examples of it. So far as we know, no elementary substance assumes such a form. It is rare among simple compounds, though we see it in silicic acid and the hydrated oxides of some metals. In

the higher organic compounds, such as go to make up living organisms, it is common. The elementary substances most favourable to development are, naturally, those which combine most readily, and the study of inorganic chemistry indicates three or four pre-eminently—carbon, oxygen, nitrogen and hydrogen. So that if we did not know the form of matter that is associated with and displays the simplest phenomena of life, the study of inorganic chemistry would lead us to search for it in some colloid or jelly-like substance which was a combination of one or more of these elementary bodies. *A posteriori* conclusions like these, however, are of no constructive value. We have worked, so to speak, from the other end, but having the facts before us, we can see both in the methods of combination and in the properties of compounds in inorganic nature, a definite indication of the higher and more complex organic nature which we know to be the basis of consciousness.

A colloid substance, a small mass of albuminous jelly, composed mainly of carbon, nitrogen and oxygen, is observed floating about in sea water. From time to time, it comes in contact with microscopic portions of decaying plants and animals, these stick to its slimy surface, are absorbed, undergo still further decomposition, and become part of the mass of jelly, consequently the mass grows bigger. From time to time, too, excrescences appear on its surface, part of the mass is pushed out as it were, emerges and recedes, sometimes unchanged, sometimes taking back with it to the mass a fragment of food to be absorbed. When the mass attains a certain size, its shape definitely alters. From being more or less circular it assumes that of the figure 8. The junction between the upper and lower portions becomes narrower, and finally they separate, each portion thenceforth having an independent existence.

This is the whole life history of one family of the protozoa—the monera of Haeckel—the most simple form we know of living matter. Why, being identical in chemical composition with albuminous nitro carbons made in the laboratory, and with other organic nitro carbons, it should display powers so vastly in excess of these latter—why the natural moneron should move, feed, digest, and propagate, while a chemically identical substance should show no trace of such powers, we do not know, and no intelligible explanation has yet been suggested, but given protoplasm, given this living substance of the protozoa, we have before us all the factors of organic evolution. From the little floating jelly disc we can trace a development of consciousness which has produced the bee's cell and the spider's web, the butterfly's wing and the changing tints of the chameleon, the Jupiter symphony and the Pantheon.

The development of consciousness from its earliest expression seems to follow, up to a certain point, the development of the organism. Given a simple organism like the monera or amœba and we have simple expression of consciousness—absorption of food—increase in size, and assimilation of reproduction by division. Given a more complex organism we have an expression of consciousness correspondingly more complex. The jelly disc floating in the sea becomes condensed in the middle, and forms a nucleus, its outer surface becomes harder and forms a sort of skin round it; before division takes place a second nucleus is formed—the mass becomes hollowed out and assumes cell form, and this cell has the power of reproducing other cells as well as of living a communal life with others. From the simple cell the development can be traced with some degree of certitude of all the higher forms of life, both plant and animal, and it must be borne in mind that whatever it is that gives the particle of

albuminoid jelly we call protoplasm its special consciousness, the same force is still operating constantly, unceasingly. The organism we call a plant has in some mysterious way the power of decomposing the earth, the water, or the air in which it lives, and of forming out of the elementary substances thus produced living protoplasm. We can form complex nitro-carbon combinations, but ours, if left to themselves, do not grow, they either remain inert or decompose, forming other combinations—the compound that the plant forms goes to increase its size, becomes part of it and takes its share in the work of making new protoplasm. The algæ do this out of the sea water in which they live—the oak does it partly out of the air by its leaves, and partly by its roots out of the ground. This is why plants purify the air so much. In the day time, when the sun shines, and they are busy at their work, they are drawing in atom after atom of carbonic acid gas, are splitting it up into carbon and oxygen, using the carbon to make more protoplasm, and setting free the oxygen.

The organism which we call an animal cannot do this. It must obtain the protoplasm of which its cells are made from plants ready made. It has lost, if it ever had, the power of producing this substance from the earth. There is a genus of ant, *formica sanguinea*, which has so long compelled another little ant to work for it that it is now in many ways helpless—it can do few or none of the ordinary duties of its life, it is dependent upon its slaves. So it is with animals. They are dependent on the plant organisms for their protoplasm, without which they could not grow, nor reproduce, nor live.

The words animal and plant are used here in sharp contrast, but it must not be inferred from this that there is any line of demarcation between them. There is not.

Here, as elsewhere, nature makes no leap. There is a borderland where the organisms cannot be separated into either class. The *fungi*, mushrooms, are a family of parasites, with most of the characteristics of plants, but which feed upon them as animals do, assimilating ready made protoplasm, and, like animals, excreting the surplus carbon in the form of carbonic acid gas. Some of the orchidaceæ also have taken to live on decaying vegetable matter, they have little in common with the plant organisms, and they betray their abnormality by their curious and fantastic shapes. Then there are whole genera of carnivorous plants, some of which obtain their sustenance much as lions and tigers do. In short, we can see no break in nature between the moneron enveloping a fragment of decayed seaweed and the philosopher at dinner. As to the consciousness of plants the keenest botanists are the most eloquent. Their colours and scent, their wonderful contrivances for fertilization, for the protection of their seeds, ensuring their distribution, and planting when ripe, their susceptibility to sun and light, even to slight variations of temperature, to narcotic and other poisons, their powers of adaptation. The deep-rooted deep-feeding rice of Burmah becomes a surface feeder in one generation in India; Arabian dates, English apples and strawberries, Muscat grapes, are all popular testimony to the fact that plants are in a way conscious of their *habitat*, and thrive or degenerate in accordance with it. The old gardener will tell you that peach trees like a south wall, and that potatoes want a light sandy soil. There is no lack of proof, moreover, of a more active consciousness in plants of a disposition alert and ready to take immediate advantage of favourable circumstances. The insect eating *Dionæ* closes its leaf instantly upon a misguided fly, holds him tightly so long as he struggles, keeps him until all his

juices have been absorbed, and then lets him drop; the same leaf clasping a falling morsel of wood will release it quickly, realizing that it is not good to eat, but it will hardly move when the wind brushes another leaf against it. Bury an old bone in a vineyard, in a day or two the vine roots will have found it, and will have clasped it tightly, sucking out its juices.

A shoot of the common hop moves round steadily in the direction of the sun, describing a complete circle, and continuing its motion until it comes to a support round which it can twine.

After a shoot has wound round a stick, say, if this be withdrawn, it retains for a time its spiral form, it then straightens itself and again commences to revolve.

The shoots of the *Scyphanthus elegans* persistently turn with the sun at first, and then change, moving round in the opposite way.

One of the *Convolvuli Impomœa*, indigenous to South Africa, always grows straight there; brought to Dublin, to a damper climate, where its shoots grew quickly, it began to twine.

As applied to animals, the problem of consciousness has been somewhat confused by attempts at specialization. We have *reflex action*, *instinct*, *intelligence*, *self-consciousness*, *reason*, all implying certain forms of it, but none exclusive or definite. Whether there is any essential difference between them is more than doubtful. It is certain that we cannot discriminate accurately. They are all indissolubly connected with the physical organism, and though we look in vain for the highest phenomena in the lowest organism, the lowest phenomena are common to all. Moreover, the highest expression of some modes of consciousness—the senses of hearing, sight, smell, for instance—is not found in the highest organisms: a man cannot see so well as a

hawk; nor hear so well as a horse; nor has he so keen a scent as the hound. The most we can say is that, generally speaking, a higher form of consciousness is displayed by higher organisms than by the lower. And here let us stop for a moment to enquire what we mean when we use such terms as *reflex action*, *instinct*, *intelligence*, and *reason*; they do unquestionably denote distinctive phenomena. They represent phases of consciousness which are distinct enough, but which overlap and form an unbroken series such as we cannot divide accurately at any point. The first, the lowest form that reveals itself to us, is *reflex action*: non-mental nerve muscle adjustment as Dr. Romanes describes it. The organism or part of it responds to certain stimuli, always in the same way to the same stimulus, and it does so apart from any mental effort. This power is generally inherited, although it may to some extent be acquired. Digestion, the heart's action, the contraction of the skin by cold, which we call "goose flesh," are familiar examples of it in man. *Instinct* is reflex action into which *mental effort* is imported, the action has a definite end, but the necessity for it is often beyond the experience of the organism, and the end is not necessarily in view. This power is, generally speaking, inherited, but it can be and is developed in the individual.

Sir Benjamin Brodie defines instinct as a principle by which animals are induced, independently of experience and reasoning to the performance of certain voluntary acts which are necessary to their preservation as individuals, or to the continuance of their species, or in some other way convenient to them.

Hartmann, in his *Philosophy of the Unconscious*, says, "Instinct is action taken in pursuance of an end, but without conscious perception of what the end is."

Darwin points out that instinctive action shows little or

no improvement in the individual: the beaver builds its dam and the bird weaves its nest as well the first as the last time in their lives.

Later observations, however, have somewhat modified this view. Instinctive actions are frequently repeated by the same individual, and are performed similarly by other individuals of the same species. The tailor bird sews leaves together in the same way year by year, and all tailor birds make their nests in the same way.

Intelligence reveals mental effort more clearly, and may be conceived to be the result of experience. This and *reason* differ in degree only, the latter term being reserved for the power of deducing abstract ideas from experience, and adapting them as a guide to future action which is beyond experience. A particular intelligent act recurs less frequently than an instinctive act in the life of the organism. When the same action recurs frequently, the mental effort in connection with it is less obvious, and it has a tendency to become instinctive. That is only to say, if we are in the habit of doing the same thing over and over again, our muscles and nerves get used to the work. In many of our factories girls perform intricate mechanical operations—making packages, filling boxes—without the slightest mental effort, and at a speed which the eye cannot follow.

Similarly, instinctive action has a tendency to become reflex. Make a sudden movement as if to strike a new born child in the face, its eyes remain open; repeat the experiment in a month or two, its eyes close instinctively, it has learnt mainly by inheritance, partly, perhaps, by experience, to protect itself in this way. In the adult no power of will suffices to keep the eyes open in view of such a demonstration.

The observations of naturalists afford us so many

examples of these various forms of consciousness in animals that there is some difficulty in making a selection. That the subject is of entrancing interest goes without saying, and one is tempted to dwell upon it unduly. As every student knows, the line of development of living organisms separates a little beyond the genus *annelida* into two main branches—vertebrata and invertebrata. The former culminating in the anthropoid apes and man—the latter in the lepidoptera—ants and bees. The development of mental power along each line has been enormous, transcending even the enormous organic development until, when the end is reached, one is in sober earnest tempted to compare the two intelligences. For, recollect, our investigations in connection with such small organisms as ants are made necessarily under most adverse circumstances. We cannot hope to observe their whole life, since their home is underground, and we cannot see them in their more intimate relations with their fellows. Enough, however, is on record to warrant our attributing to them every mental quality we possess, and, to tell the truth, one or two of our vices. They have solved the question of communism—we haven't—for they can generally live peaceably in colonies, and on good terms with their neighbours. This, in a district where all are foraging for a living, and when questions of ownership are sure to arise, is no small matter. Occasionally, civil war breaks out, and it is more ferocious and merciless than the battles with other colonies. They recognise their parental responsibilities to the fullest extent, feeding, washing, and brushing their children, and teaching them most carefully. They are given to harmless play—to friendly trials of strength—to gymnastic exercises—they sleep much, as we do, kicking their neighbours now and then, and when they wake, yawn, stretch their legs, and proceed immedi-

ately to their toilet. They plant and cultivate rice—if not other grains—harvest and store the seed, and prevent it germinating—they keep aphides for the sweet juices these insects excrete—build stables for them—keep the eggs carefully during the winter months, and when March comes, and the eggs are hatched, the young grubs are carried up and set to feed on the daisy stalks. They keep slaves, and make organized raids to obtain slaves' eggs. And they leave so much work to their servants that they become effete and almost helpless. They bury their own dead with ceremony in a place set apart and clearly marked out—strangers who die in their midst are carried far away, are never interred with their friends—they can recognise the members of their own colony after more than a year's absence, and their descendants whom they have never seen, and they can communicate with them, if not by actual language, at least by a system of signs that can express abstract facts. Though less intelligent than ants, bees and wasps show mental powers of a very high order, in fact the making of their cells is one of the most wonderful *examples* of inherited consciousness that nature shows to us, and evidences of what we cannot call by any other name than reason are not at all uncommon in many of the lower order of the invertebrata. Among the vertebrates more than one form of intelligence is to be remarked that has lapsed or become dull in higher organisms.

The homing instinct in some birds is a case in point. A homing pigeon will fly straight home if thrown up fifty or sixty miles away, although it has been in a basket in the train since it was taken from its companions. This power is quite inexplicable, since it certainly does not depend upon sight. The curvature of the earth would prevent a destination fifty miles away being seen at any height to which a pigeon can rise.

When returning from very long distances, pigeons are seen to make one or more wide circles in the air before flying off, and they appear to get their compass in this way with perfect accuracy. Some survival, it may be, of this faculty of direction has been remarked among savages, who can find their way through thick forests with perfect ease; and Capt. Parry, in his polar voyages, says he noticed that while piloting his way, compass in hand, among the masses of drifting ice, the Esquimaux always knew the direction to go in. To the higher vertebrata, reason, more or less independent of inherited instinct has *always* been conceded, and I will not weary you by giving illustrations of it.

To sum up, then, the results of our enquiry. We find evidences throughout nature of a force, to which we have given the name of *consciousness*. We see it only in connection with matter, we cannot conceive of it apart, alone. We distinguish between this force, consciousness, and the universal force of gravitation, not because we admit any difference between them *per se*, but because, given the factors, we can calculate the effect of one and not of the other. The force of gravitation appears to us regular, unswerving; the force of consciousness appears to us irregular, adaptable. Given the distance of the moon, given her diameter, etc., we can calculate to a minute the time of high water at any part of the globe; given all the information chemistry has for us, we cannot predict a single property of a new compound, or say how it will crystallize. The existence of the planet Uranus was demonstrated on paper as certainly as the 47th proposition of Euclid, and its position in the heavens indicated before it was ever seen. We had all the factors. In dealing with the problem of consciousness one factor is ever wanting, stultifying all our predictions, defying all analogy. Our

only knowledge of it is empirical, and a new and unforeseen experience seems to await each new investigation. Whether, if we had all the factors of consciousness, the phenomena of life as we know them now would range themselves in order and take their place in that great concatenation which is being slowly revealed to us, we do not know, we can only surmise, and our conjectures, so far, have been idle dreams. We see elementary substances as we call them, substances that have resisted every attempt at division, taking upon themselves different shapes and different natures; we see them attracting and rejecting other elements, casting off one to embrace another like a girl her sweethearts, without apparent reason; we see both elementary substances and their compounds to the third and fourth generation, persistently assuming definite forms and resisting interference or modification. Then there is a gap, and we find a not very complex compound—only a little carbon and nitrogen and hydrogen, and perhaps a trace of phosphorus—endowed with powers of locomotion, assimilation, and reproduction, we can trace the beginnings of an organism; there is a nucleus in which these simple functions seem to centre; then there is a cell—two cells—in partnership, then what we may call a commune, each part a separate organism, and yet each subordinating its functions to a common end—the zoo-phytes, the beautiful sea nettles, are examples of this. Advancing in complexity we see a centre of authority developing in these communes, and communications may be traced from its centre to its limits, nerves develop, and the functions of the different communal organisms begin to be specialised, some occupying themselves with one function, some with another. The central authority becomes more necessary for the co-ordination of these specialized functions, the communications with it become more

intricate—nerve centres and ganglæ begin to develop. Centralization still goes on, a concentration of the authority becomes more evident, the brain develops, the ganglæ becoming secondary and distributing centres, the brain begins to record the experiences of many functions, it discriminates between them, its action becomes more or less ratiocinative, it neglects its functions and they begin to lapse. That is, perhaps, the *last* phase of consciousness—man is solving problems in conic sections, but he is losing his eyesight. He is much concerned over a possible fifth dimension, but his sense of smell is pitifully poor. He has invented the microphone, and it has told him that he cannot hear. And so we leave the problem. Guesses at its solution have never been wanting, but they have been mere conjectures, or else they have only increased our difficulties. This much only we can assert, that there is a force acting in what we call matter, and that the phenomena of consciousness and life are the expressions of it.

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